JOB BURNOUT AMONG CRITICAL CARE NURSES

By

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Abstract of Dissertation Presented to the Graduate School
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By

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This study was designed to test a path-analytical model of the theoretical conceptualization of burnout for critical care nurses. Three hundred critical care nurses in Florida were administered a demographic questionnaire and Work Survey Instrument, Daily Hassles Instrument, Psychological Hardiness Test, Job Diagnostic Inventory, and the Maslach Burnout Inventory. Personal, organizational, situational stress, job stress, job satisfaction, and burnout variables were examined.

Family demands, health difficulties and a low psychological hardiness and a high degree of skill variety and a dissatisfaction with job security are linked to situational stress, contributing 70 percent of explained variance. This situational stress is causally linked to perceived job stress along with the direct effects of family demands, health difficulties, dissatisfaction with nursing supervision, pay, and job security. These variables account for 71 percent of explained variance in job stress. Job stress directly affects job satisfaction.

In addition, job dissatisfaction is also directly affected by high job expectations, meaninglessness of work, low knowledge of work results, health, high task identity, a high frequency of dealing with others on the job, dissatisfaction with opportunities for advancement, pay, supervision, and satisfaction with job security. Together these account for 62 percent of the variance in general job dissatisfaction. This situation will then lead to burnout-emotional exhaustion. Burnout-emotional exhaustion is directly affected by job dissatisfaction, as well as low commitment to the career, health difficulties, low psychological hardiness, high workload, a high degree of dealing with others on the job, and dissatisfaction with job security; however, only 38 percent of the variance in burnout-emotional exhaustion was explained by these variables.

The study results provide a better understanding of the factors relevant to the development of burnout. This research indicates that there is a causal progression of situational stress, job stress, job dissatisfaction resulting in burnout.

CHAPTER I
INTRODUCTION

Background of the Problem

The empirical study of job stress in the helping professional, frequently termed "burnout" (Freudenberger, 1974; Maslach, 1976; Maslach & Jackson, 1986), has provided valuable information and insight into this phenomenon over the last 15 years. Freudenberger (1974) first described burnout as a state of physical and emotional depletion resulting from conditions at work. Maslach (1976) claimed that "burned out" professionals "lose all emotional feelings for the persons they work with and come to treat them in detached or even dehumanized ways" (p. 16). Freudenberger and Richelson (1980) later described burnout as a "sense of fatigue or frustration brought about by devotion to a cause, a way of life, or relationship that failed to produce the expected reward" (p. 13). Edelwich and Brodsky (1980) further defined it as a "progressive loss of idealism, energy, purpose, and concern as a result of conditions of work" (p. 14), and Pines, Aronson, and Kafry (1981) added that it is "characterized by physical depletion, by feelings of helplessness and hopelessness, by emotional drain, and by the development of negative self-concepts and negative attitudes toward work, life, and other people. . . . It is a sense of distress, discontent, and failure in the quest for ideals" (p. 15). Thus, although the concept of burnout has been defined in many ways, there is general consensus that the symptoms include attitudinal, emotional, and physical components (Freudenberger, 1974; Maslach, 1976; Maslach & Jackson, 1986).

Various researchers (Berkeley Planning Association, 1977; Maslach & Jackson, 1981; Perlman & Hartman, 1982) have conceptualized burnout as a syndrome of emotional exhaustion that proceeds to depersonalization, and results in reduced personal accomplishment that may occur with persons who work with others in some manner. The term "emotional exhaustion" describes the first stage of burnout, which includes feelings of being emotionally drained and overextended by one's exposure to other people. When emotional resources are over-used, one feels unable to give of oneself to others. The second stage of burnout is depersonalization, which includes an "unfeeling and callous response toward people, often the recipient of one's service of care" (Maslach, 1982b, p. 30). This negative attitude may be manifested in rude, inappropriate, or insensitive behavior toward clients, as well as withdrawal from them. Reduced personal accomplishment is the third stage of burnout, which is characterized as a decline in one's sense of competence and perception of successful achievement in one's work with people resulting in feelings of inadequacy, failure, loss of self-esteem, and even depression (Maslach, 1987).

Recently, a number of researchers have posited transactional models of burnout to aid understanding of its etiology (Cherniss, 1980a; Chiriboga & Bailey, 1986; Cooper, 1986; Courage & Williams, 1987; Cox & Mackay, 1981; Fletcher & Payne, 1980; Golembiewski et al., 1986; Harrison, 1983). According to Handy (1988), the major theme of transactional models is that stress and burnout result from the transaction between individual worker needs, personal resources, and the demands, constraints, limitations, and/or facilitators within the work environment. Key to this conceptualization is the emphasis on the

individual worker's subjective perception of stressors as opposed to conditions that actually exist in the work setting (Golembiewski et al., 1986; Leiter & Maslach, 1988; Maslach & Jackson, 1986).

Perlman and Hartman (1982) have proposed a transactional model (see Figure 1-1) of burnout that is of particular interest because of its breadth and because it includes groups of personal-psychological and organizational-work variables that have been empirically studied individually, or in combination, since 1977.

Statement of the Problem

In their model, Perlman and Hartman (1982) represented burnout as a function of personal characteristics, organizational-work characteristics, and stages of stress including the degree to which a situation is conducive to stress, perception of organizational job stress, and outcomes of the stress such as job satisfaction and psychological response. Although this conceptualization of burnout seems to be fairly comprehensive in terms of variables included, there are limitations with respect to the posited relationship among the components of the Perlman and Hartman (1982) model. One problem is that this model is not totally consistent with empirical findings reported in the literature. For example, according to the literature, job satisfaction has a direct relationship to pay, dealing with others at work, opportunity for advancement, and economic market conditions (Jayaratne & Chess, 1983; Oldham, Hackman, & Pearce, 1976; Paredes, 1982), but from Figure 1-1 it would appear that burnout has a direct relationship to pay, support from others, and economic market conditions and that job stress has a relationship with opportunity for advancement. Also, Perlman and Hartman (1982) seemed to suggest that burnout precedes job satisfaction, but other formulations of burnout would equate it with what Perlman and Hartman (1982) defined as coping. Another limitation is

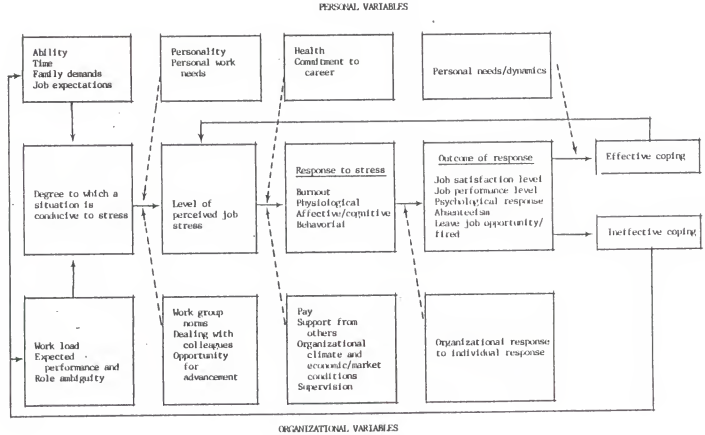

Figure 1-1

A Perceptual-Feedback Stress Paradigm

Adapted from Perlman and Hartman (1982).

that Perlman and Hartman (1982) conceptualized each variable as affecting only the next continguous variable in the model. They did not allow for the possibility of some variables having direct or indirect causal relationships to more than one outcome variable. From their discussion of the burnout model, it seems likely that Perlman and Hartman (1982) were unaware of how systems of linear regression equations can be specified using path analysis (or causal modeling) to test a theoretical model. Such an empirical test of a transactional model of burnout seemed to call for obtaining measures on a fairly wide array of personal and organizational variables entering them into multiple regression and path analysis to permit the assessment of both direct and indirect effects of independent variables on outcome variables.

Purpose of the Study

The purpose of this study was to collect data to develop and refine a theoretical model of burnout for critical care nurses using variables identified from research literature. The first stage of the study involved an extensive literature review to identify variables that had been studied by others in relationship to burnout. Table 1-1 contains a summary of variables that were identified in the literature review for this study that are posited to have a meaningful relationship in the process that leads to job burnout. As will be indicated in Chapters II and III, multiple indicators have been used to operationalize the variables labelled as Personal Work Needs and Work Group Norms in Table 1-1.

The second stage of the study required depicting the relationships among the variables in a path diagram. The path diagram in Figure 1-2 graphically displays the pattern of hypothesized relationships among a

Table 1-1

Variables Reported to be Significantly Related to Burnout

Predictor Personal Variables	Predictor Organizational Variables	Outcome Variables
Ability	Workload	Situation conducive to stress
Time	Expected role performance and role ambiguity	Level of perceived job stress
Family demands	Work group norms	Job satisfaction
Job expectations	Dealing with colleagues	Internal job motivation
Personal work needs	Opportunity for advancement	Burnout
Physical health	Pay	
Commitment to career	Support from others	
Psychological hardiness	Organizational climate and economic/market conditions	
	Supervision	

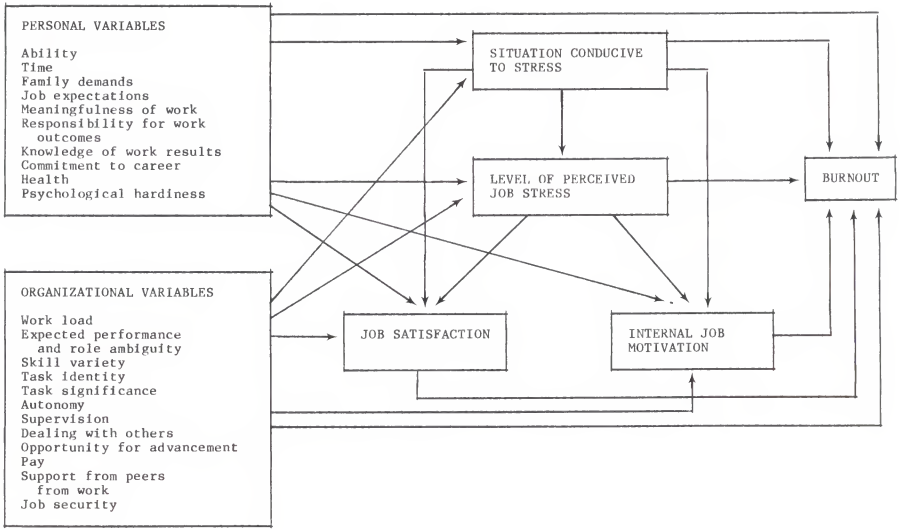

Figure 1-2

Full Model of Burnout

set of personal exogenous variables, a set of organizational exogenous variables, and a series of endogenous outcome variables. An exogenous variable is defined as a variable that has variability due to causes outside the model, when the analysis of the cause of an exogenous variable is not under consideration in the model (Asher, 1976). It is not the purpose of a path analysis to explain the variability of an exogenous variable or its relations with other exogenous variables.

An endogenous variable is a variable that has variance contributed to it by exogenous or other endogenous variables in the model (Asher, 1976). The endogenous variables under study in the path analytical model include the degree to which a situation is conducive to stress, job stress, job satisfaction, internal work motivation, and burnout. Unidirectional arrows or paths have been drawn from the exogenous causes to the endogenous effects. The causal flow in the burnout model under study is recursive or unidirectional. Some endogenous variables are treated as dependent variables in one set of analyses and independent variables in relation to other variables. For example, the degree to which a situation is conducive to stress is a dependent variable for one set of variables and an independent variable for job stress. To simplify the visual presentation, the personal and organizational variables have been grouped in boxes, and arrows have been drawn from the boxes to represent direct effects of each exogenous variable in the boxes in the left column on the respective endogenous variables. Typically curved arrows are used to indicate correlations among exogenous variables. In Figure 1-2, these curved arrows were not shown to allow the model to be depicted more clearly.

The third stage of the study was to answer the following questions using multiple regression analyses:

1. Is there a significant relationship between the situational stress variable and (a) the weighted linear combination of a set of personal variables and (b) a set of organizational variables? Which variables in the model contribute significantly to the variance in situational stress?

2. Is there a significant relationship between job stress and the combination of (a) situational stress and (b) the preceding exogenous variables? Which variables in the model contribute significantly to the variance in job stress?

3. Is there a significant relationship between job satisfaction and the combination of (a) job stress, (b) situational stress, and (c) the preceding exogenous variables? Which variables in the model contribute significantly to the variance in job satisfaction?

4. Is there a significant relationship between internal job motivation and the combination of (a) job stress, (b) situational stress, and (c) the preceding exogenous variables? Which variables in the model contribute significantly to the variance in internal job motivation?

5. Is there a significant relationship between burnout-emotional exhaustion and the combination of (a) job satisfaction, (b) internal job motivation, (c) job stress, (d) situational stress, and (d) the preceding exogenous variables? Which variables in the model contribute significantly to the variance in burnout-emotional exhaustion?

The final stage of the study was to refine the purposed model on the basis of the empirical results obtained from stage three in an

exploratory fashion. Each of the independent variables that made a significant contribution to the variance in one or more dependent variables was considered a candidate for inclusion in a reduced model of burnout. Path analysis was used to estimate the direct and indirect effects of exogenous variables on endogenous outcome variables in a reduced model of burnout. Results of the analyses of the full model and a suggested reduced model will be presented in Chapter IV.

Significance of the Study

This study has practical value for the critical care staff nurses themselves, the patients cared for by the critical care nurses, the institutions in which the critical care nurses work, and the educational preparation of nurses taught by nursing faculty. Maslach (1982) stated that the burnout syndrome stems from a social interaction between helpers and helpees, when in certain circumstances, helpers become unduly involved emotionally with the recipients, overextend themselves, and demonstrate emotional exhaustion. Nurses, as well as teachers, are helping professionals and share the burdens and frustrations in the helping relationship. Maslach (1982) described the progression of burnout from emotional exhaustion to depersonalization in which helpers decreased contact with clients and showed a callous, detached, and dehumanizing response towards helpees. He proposed that clients receiving care from helping professionals in the stage of depersonalization do not receive adequate care because of ineffective interpersonal helping relationships. Because nursing activities require frequent contact with patients in an effective interpersonal

relationship, patients cared for by nurses in the stage of emotional exhaustion or depersonalization may suffer from pathological detachment on the part of the nurse. Critical care nurses who avoid their patients and families lose opportunities essential for timely and potentially useful interventions. This results in an unfortunate physiological loss to the patient and a psychological loss to the patient, family, and nurses and other members of the health team.

Burnout is costly as well to the institutions in which the helping professionals work because of poor performance, job dissatisfaction, absenteeism, job turnover, and illness of workers, all of which have been related to this phenomenon. Knowledge about the causes of burnout and the organizational work variables that critical care nurses perceive as contributing to burnout could allow nursing administrators to identify strengths and weaknesses in the hospital organization in reference to prevention, recognition, and management of burnout. Such information might give insight into the control of burnout. A variety of strategies by those concerned with professional development and nursing management could be employed to help alleviate nursing burnout, including redesign of jobs, changing organizational policies, establishing flexible schedules and support services, improving training for staff, and designing explicit programs for more decisionmaking, emotional support, and recognition.

Knowledge of results of this study could assist nursing educators in curricular development. By recognizing burnout as a legitimate problem with specific causes, greater efforts may be made to deal effectively with it in academic institutions.

Clinical nursing faculty are also in an excellent position to teach students how to cope with a stressful job as well as how to make the job less stressful, but they are hampered by a lack of information about

sources of emotional stress on the job and the risk of burnout in many nursing baccalaureate programs. It is important for nurse educators to understand the causes of burnout among helping professionals. Students should have more accurate information about the work they are undertaking before they actually start. If this were accomplished, they might have fewer surprises that destroy their professional ideals or lead them to leave the profession. The consequences of attrition and turnover may be greatly reduced by providing realistic job expectations. Prior knowledge about the causes of burnout may enable nurses to recognize it in its early stages, whether in themselves or in others. Greater awareness of the risk of burnout can lead nurses to be better prepared for it in advance. They can anticipate causes of emotional stress before they occur and develop definite plans to deal with them. The results of this study will allow them to have a clearer understanding of the personal and organizational variables that may enable them to be successful at their work.

Limitations

The following limitations of the study must be taken into consideration when interpreting the findings:

1. The range of the study was limited to a geographical region within the state of Florida that included Melbourne, Orlando, Jacksonville, Ocala, Tallahassee, and Gainesville.

2. The sample was limited to a cross-section of critical care nurses who work in critical care settings, including Medical and Surgical Intensive Care Units.

3. The sample may be biased because individuals in advanced stages of burnout may have been so apathetic that they did not participate in the study.

4. Several of the constructs were measured by self-report questionnaires that included items containing content of a sensitive nature; some respondents may have reported inaccurately due to their inability or unwillingness to recognize symptoms in themselves.

5. In this study, only the first stage of burnout (i.e. emotional exhaustion) was examined.

6. Variables examined were limited to those that could be logically viewed as representing constructs in Perlman and Hartman's (1982) conceptual model of burnout.

Assumptions

There are three assumptions upon which the present study is grounded:

1. Burnout in a biopsycho-social concept related to personal, psychological, and organizational variables as a result of a stress response.

2. The strength of relationship between burnout and these contributing factors can be estimated through application of a linear model.

3. The independent variables in the model are all those contributing importantly to burnout.

CHAPTER II
REVIEW OF THE LITERATURE

Derivation of the Concept Burnout

The concept "burnout" originated from stress research. There are many publications reviewing varied definitions of the concept of stress (Antonovsky, 1979; Cannon, 1932; Lazarus, 1966; Mason, 1975; Selye, 1956; Selye, 1974; Sharit & Salvendry, 1982; Vachon, 1987). In an early definition, Cannon (1932) reflected upon the physiological aspect of stress and related it to society and job organizations. Selye (1956) broadened the physiological concept of stress even further.

Selye's (1956) work was based upon earlier research of Cannon that included homeostasis adaptations. His identification of body hormones in the "fight or flight" mechanism for maintenance of homeostasis focused on protective maneuvers in physical, social, or chemical situations that elicited a physiological response. He defined stress as "the non-specific response of the body to any demand made upon it" (Selye, 1974, p. 141) and stressors as any stimuli that cause physiological adaptation. If stress results in positive effects, it is identified as eustress; stress associated with negative results is distress. Furthermore, he classified physiological adaptation to stress into three stages--alarm, resistance, and exhaustion--and referred to this process as the general adaptation syndrome. The alarm phase consists of neurohormonal mechanisms that prepare the body for defense against an adaptation caused by stressors. The second phase, the resistance phase,

consists of adaptive mechanisms that are instituted to destroy the stressor and restore homeostasis. Exhaustion, which occurs if the body's adaptive resources are depleted, is irreversible and results in death. Once the stressor is perceived as a genuine stressor, the condition is recognized as stress and the general adaptation syndrome.

The concept of coping as human adaptation to stress has been studied by many psychologists. French, Rodgers, and Cobb (1974) proposed a model for adaptation to stress that considers the interaction of characteristics of the individual and environment. A cognitive appraisal analysis of psychological stress has been addressed by Lazarus (1977), who defined coping as problem solving attempts to deal with threatening conditions. Coping, in this approach, depends on how individuals appraise their encounters with the environment with regard to the potential of those encounters as threatening, harmful, or challenging.

Burnout has been identified as a syndrome resulting from a negative response to occupational stress. Researchers in a variety of specialities, including educational psychology, clinical and social psychology, psychiatry, sociology, cultural anthropology, nursing, occupational medicine, and personnel management have provided an important volume of literature which constitutes the background for the present study. The following review of literature is concentrated on job-related personal, psychological, and organizational factors that form the basis for burnout.

Definitions of Burnout

Freudenberger (1974) first used the term "burnout" to describe an unfavorable response among helping professionals working in psychiatric

settings. He observed a pattern of behaviors and attitudes that he also experienced. He identified a helping professional experiencing burnout as one who becomes exhausted from excessive demands on strength, energy, or resources or who is worn out. Freudenberger and Richelson (1980) later described burnout as a "sense of fatigue or frustration brought about by devotion to a cause, way of life, or relationship that failed to produce the expected reward" (p. 13). At the First National Conference on Burnout, Maslach (1982b) presented the following definitions of burnout that were reported in the literature:

> A syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who do people-work of some kind.
>
> A progressive loss of idealism, energy, and purpose experienced by people in the helping professions as a result of the conditions of their work.
>
> A state of physical, emotional, and mental exhaustion marked by physical depletion and chronic fatigue, feelings of helplessness and hopelessness, and the development of a negative self-concept and negative attitudes toward work, life, and other people.
>
> A syndrome of inappropriate attitudes toward clients and self, often associated with uncomfortable physical and emotional symptoms.
>
> A state of exhaustion, irritability, and fatigue that markedly decreases the worker's effectiveness and capability.
>
> To deplete oneself. To exhaust one's physical and mental resources. To wear oneself out by excessively striving to reach some unrealistic expectations imposed by oneself or by the values of society.
>
> To wear oneself out doing what one does to do so. An inability to cope adequately with the stresses of work or personal life.
>
> A malaise of the spirit. A loss of wellbeing. An inability to mobilize interests and capabilities.

> To become debilitated, weakened, because of extreme demands on one's physical and/or mental energy.
>
> An accumulation of intense negative feelings that is so debilitating that a person withdraws from the situation in which those feelings are generated.
>
> A pervasive mood of anxiety giving way to depression and despair.
>
> A process in which a professional's attitudes and behavior change in negative ways in response to job stress.
>
> An inadequate coping mechanism used consistently by an individual to reduce stress.
>
> A condition produced by working too hard for too long in a high-pressure environment.
>
> A debilitating psychological condition resulting from work-related frustrations, which results in lower employee productivity and morals. (pp. 30-31)

Maslach (1982b) analyzed the problem of defining burnout and concluded that some definitions are broad, others narrow; some include emotional and physical behaviors, others include psychological and cognitive terms. In addition, some describe a process while others present a process; some relate causes while others relate consequences. One commonality in the definitions is that the burnout syndrome presents a psychological process affecting individual attitudes, motives, feelings, and expectations. The individual perceives the syndrome as unfavorable, dealing with distress, problems, malaise, and/or negative outcomes. Furthermore, Maslach pointed out that there is agreement on the component of exhaustion as a loss of energy and debilitation, physiologically and psychologically, a loss of trust and apathy, with loss of feeling, concern, and spirit. Another component includes a disparaging response to others, with depersonalization, inappropriate

attitudes toward clients, loss of ideals, and irritability. A third component is characterized by unfavorable responses toward oneself and one's personal achievements, with depression, withdrawal, low morale, lowered production, and a decrease in effective coping.

Stages in Development of Burnout

Maslach (1982a) described a progression of stages in burnout leading from emotional exhaustion to depersonalization and finally ending with decreased personal accomplishment. Helping professionals who have emotional exhaustion feel drained, used up, and repleted without resources. As a protective mechanism, some helping professionals acquire a cold indifference to others' needs, become detached to close relationships, and acquire a callous disregard for the feelings of others. The occurrence of this dehumanizing attitude heralds in the second component of the burnout syndrome, depersonalization, which consists of the expression of poor opinions about clients, actively disliking them, expecting the worst from them, ignoring their requests, and giving inappropriate help and care. The third aspect of the burnout syndrome is decreased personal accomplishment, which consists of helping professionals developing a sense of inadequacy in dealing with their clients. The helping professional may even develop a poor self-esteem and perceive of himself as a failure. As a result, depression, absenteeism, poor job performance, and changing jobs may occur.

Similar developmental models have been suggested by other researchers. For example, Edelwich and Brodsky (1980) designed a four-phase developmental process: (a) enthusiasm with high energy, high hopes, and unrealistic job expectations; (b) stagnation, in which the job is no longer perceived as the central force of a worker's life;

(c) frustration, in which a worker directs personal confidence and value of the job; and (d) apathy, a defense mechanism against job frustration necessary for survival. Similarly, Veninger and Spradley (1981) presented a developmental process that consisted of five stages: (a) honeymoon, (b) fuel shortage, (c) chronic symptoms, (d) crisis, and (e) hitting the wall.

Costello and Zalkind (1963) and Daley (1979) posited stages of burnout specifically for the nursing profession using the framework of Selye's general adaptation syndrome. The first stage is an alarm stage, characterized by an emergency mobilization of the body's defense maneuvers used to maintain successful performance or to prevent an internal conflict leading to frustration. The second stage is the resistance stage, in which there are continued attempts to manage the stress. If stress management is not achieved, exhaustion occurs. Shubin (1978) described nurses as high-risk victims for burnout and delineated the stages as beginning with physical fatigue and emotional drain, followed by dehumanization of patients and guilt for not caring any longer, and finally disgust for oneself and others.

Causes of Burnout

Freudenberger (1975), Freudenberger and Richelson (1980), and Pines, Aronson, and Kafry (1981) have contended that personal variables including psychological stress are the major precipitating cause of burnout. Freudenberger (1974) studied ego analysis and believed that a committed and over-dedicated personality type was susceptible to burnout. He and Richelson (1980) also suggested another personality trait that included a restricted social life with all meaning and gratification

achieved from the job. Edelwich and Brodsky (1980) discovered an association of burnout with the young, enthusiastic, overcommitted helping professionals. Other specific psychological factors associated with burnout in the care provider include competence, intolerance in confronting obstacles, lack of self-confidence, nonassertiveness in dealing with people (Gann, 1979), lack of psychological hardiness (Keane, Ducrete, & Adler, 1985; McCranie, Lambert, & Lambert, 1987), life events (Chiriboga & Bailey, 1986), ineffective coping skills, and inadequate social support (Chiriboga & Bailey, 1986; Cronin-Stubbs & Rooks, 1985; Numerof & Abrams, 1984).

Evidence to date suggests that not all individuals are equally at risk to develop burnout (Cherniss, 1980a-b). Cherniss stated that organizational factors that include availability of resources and power of the helping professional to apply them, autonomy, the stimulation and challenge of the job, the rewards at work, and the degree of structural support all share in the occurrence of burnout. Role conflict, role overload, lower socioeconomic status, and job dissatisfaction (Oldham, Hackman, & Pearce, 1976) also appear to promote burnout (Kahn, 1978). Burnout has also been related with a greater number of hours spent in direct patient contact (Lewiston, Conley, & Blessey-Moore, 1981; Maslach & Jackson, 1982), more difficult client problems (Meadow, 1981; Pines & Maslach, 1978), caseload (Berkeley Planning Associates, 1977; Freudenberger & Richelson, 1980; Larson, Gilbertson, & Powell, 1978; Maslach & Jackson, 1984a-b; Maslach & Pines, 1977; Perlman & Hartman, 1982; Solomon, 1979), a low degree of peer support (Burk et al., 1984; Jackson, Schwab, & Schuler, 1986; Leiter & Maslach, 1986; Maslach & Jackson, 1982), a low degree of commitment to the organization (Leiter &

Maslach, 1988), and organizational components of leadership, communication, supervision and responsibility. Leiter and Maslach (1988) and Gains and Jermier (1983) indicated that dealing with co-workers was identified as the strongest source of job stress and burnout. Burnout has also been linked to social and physical isolation in the work setting (Larson, Gilbertson, & Powell, 1978). Maslach and her colleagues (Maslach & Jackson, 1981a; Maslach & Pines, 1977) indicated that the basis of burnout is interpersonal contact that includes intense commitment and personal care when helping others, especially those with severe problems.

Conceptual Models of Burnout

Our understanding of the burnout syndrome has grown over the last 15 years. No longer are conceptual models restricted to intrapsychic factors. There is considerable acceptance that burnout is not a simple, unidimensional syndrome with easily identified causes. Rather, it is considered a complex problem, generic to intrapsychic, interpersonal, social, occupational, and organizational components.

Fischer (1983) posited a psychoanalytic model of burnout in which workers are driven to maintain a high self-esteem by working even harder despite unrealistic expectations. These workers "idealize their work" and relate to a "compensatory illusion of grandiosity." He also stated that workers who are exhausted may be inappropriately identified as burned out and use the label of burnout as an "excuse for poor performance and as a justification for both easier working conditions and higher pay" (p. 41). Fischer added to the knowledge of the function of the intrapsychic factors of burnout and focused on the importance of self-esteem as a mediator variable in the burnout process.

Harrison (1983), Farber (1983), and Heifetz and Bersoni (1983) conceptualized burnout as a process resulting when helping professionals do not receive positive and/or accurate feedback from their work environment regarding their performance efforts. Harrison (1983) viewed burnout as inversely related to the helping professionals' perceptions of competence. The likelihood of the helping professional feeling good about his/her work performance may be affected by lack of institutional support, excessive workload, and inadequate professional skills. Furthermore, he stated that if success is rarely experienced by the helping professional and if failure is usually experienced as a result of his or her job performance, burnout is likely. Farber (1983) conceptualized work related stresses and burnout as due to feelings of "inconsequentiality" by the helping professional. Like learned helplessness, Farber hypothesized that burnout results when helping professionals perceive that their efforts do not matter, and, as a result, their efforts cease. The concept of cybernetics was used by Heifetz and Bersoni (1983) in their model to describe the phenomenon of burnout. The helping professional's perception of growth in themselves and their recipients of care is strongest when goals are realized. In order to be successful in realizing goals, requirements in the cybernetic process must be identified: identification of the task, clearly defined goals, short-term progress reports, and plans for modification of one's goals. According to Heifetz and Bersoni (1983), burnout occurs when one's pursuit of goals is interrupted because there is an absence of one or more of the requirements in the cybernetic process.

Some authors have attempted to describe the burnout syndrome using a job deficit model which proposes that burnout is due to the absence of

job motivations rather than the occurrence of job stressors. Jayaratne and Chess (1983) reported that role conflict, excessive workload, and role ambiguity are not significant predictors of burnout in social work. They identified job challenge, financial rewards, and promotions as the strongest predictors of burnout and job satisfaction. Eisenstat and Felner (1983) isolated the variables of job motivations and job stressors and reported that while job stressors are related to emotional exhaustion, job enrichers, including autonomy, task significance, and skill variety are related to job motivation in helping professionals. Cherniss and Krantz (1983) also focused on the relationship between burnout and lack of job motivation. Specific variables in their conceptualization included long hours and the absence of meaning in work. In addition, Fibkins (1983) and Ianni and Reuss-Ianni (1983) emphasized that the crucial deficit variable in the burnout model is lack of organizational support. According to Fibkins, burnout in teachers occurs when the school organization is not responsive to the complex, intensive nature of teachers' work. Ianni and Reuss-Ianni (1983) suggested that individual and social factors may contribute to work stress; however, burnout is more likely to be caused by a deficit within the organizational structure.

Several other authors have advanced the stress model, incorporating essential elements of modern stress theory and drawing on past research (Beehr & Neuman, 1978; Chiriboga & Bailey, 1986; House & Wells, 1978; Matteson & Ivanovich, 1979; Perlman & Hartman, 1982). In the stress model, antecedent conditions such as sociodemographic characteristics, are seen as laying the ground work for stress that results in conditions such as burnout. Sociostructural conditions in the workplace constitute

a second element that helps shape the stress context. Specific stressful work situations and chronic strain are seen as a third level of predictor. Social support and coping strategies in turn are seen as additional predictors that may act as mediators between the stress context and stress response. Finally, burnout is viewed as the stress response. An outcome of a maladaptive stress response is low productivity; other sequelae include absenteeism, job dissatisfaction, and excessive job turnover. Although exploratory testing of the stress model of burnout has been accomplished, further comprehensive analysis is needed with larger samples.

Burnout of Nurses

Consistent with recent findings in other professions (Chiriboga & Bailey, 1986; Jenkins & Ostchega, 1986; Stone, Jebsen, Walk and Belsham, 1984), nurses who experienced more frequent work-related stress reported greater burnout. Critical care nursing is one profession where the burnout phenomenon has been acknowledged because a high rate of patient mortality, severely ill patients who are emotionally consuming, inadequate staffing and resources, and a difficult work load are encountered. According to the literature, critical care nurses are at risk for burnout when the patient presents with clinical problems in which the complexity and acuity are beyond the resources of the nurse (Bailey, Steffan, & Grout, 1980; Bartz & Maloney, 1986; Chiriboga & Bailey, 1986; Claus & Bailey, 1980; Gray-Toft & Anderson, 1981a-b; Hinshaw & Atwood, 1984; Kelly & Cross, 1985; Maloney, 1982; McCranie, Lambert, & Lambert, 1987; Numerof & Abrams, 1984; Stone, Jebsen, Walk, & Belsham, 1984; Vachon, 1987). In one study, commissioned by the American Association of Critical-Care Nurses, a national panel of experts

identified both nursing stress and nursing burnout as being among the top ten research priorities facing the profession (Lewandowski & Kositsky, 1983).

Studies were examined related to potential factors contributing to burnout of nurses. The review was limited only to studies using the Maslach Burnout Inventory as a criterion measure. In this review, the studies have been grouped according to findings related to personal characteristics of the nurse, including demographics (age, marital and family status, length of employment, income, and education), personal stressors, personality characteristics, social support, coping behavior and organizational characteristics including work stress, the work environment (worker involvement, type of unit, type of hospital, involvement in decision making), job enhancement (skill variety and new approaches, autonomy, clarity, physical comfort, work pressure), and job satisfaction.

Personal Characteristics

Demographics

Demographic variables that have been associated with burnout in nurses include age, marital and family status, length of employment, income, and education. Younger nurses are more susceptible to burnout than their older counterparts (Chiriboga & Bailey, 1986; Dames, 1983) However, Bartz and Maloney (1986) found a positive association of burnout with younger intensive care nurses.

Single care providers tend to be at greater risk for burnout than married care providers (Dames, 1983; Kimmel, 1983). In addition, junior nurses without the support of a marital partner are indicated as vulnerable to burnout (Chiriboga, 1986).

Although Pomales (1982) found a negative correlation between burnout, income, and number of people living at home, Dames (1983) and Pomales (1982) agreed that income was inversely associated with burnout.

Grutchfield (1982) found no significant difference among nurses' education in baccalaureate, diploma, or associate degree programs, but Keane et al. (1985) and Stone et al. (1984) found that nurses with baccalaureate degrees evidenced somewhat higher levels of burnout than those with three-year diplomas. Although less education has been associated with the occurrence of burnout in nurses (Grutchfield, 1982) less education with fewer years of work experience tends to make the nurse more vulnerable to burnout (Chiriboga & Bailey, 1986; Stone et al., 1984). In addition, a negative correlation has been found between burnout and a desire to remain in the field of nursing (Dames, 1983).

Personal Stressors

As indicated by the findings of Daubney (1980), Otto (1980), Chiriboga and Bailey (1986), and Stone et al. (1984) personal stressors may also be pertinent in the burnout process. In these studies, undesirable personal life change events and personal stress directly related to burnout. In addition, perception of a good quality of life five years ago was found to be inversely related to burnout (Dames, 1983).

Personality Characteristics

Grutchfield (1982) studied the relationship between personality variables measured by the Edwards Preference Schedule, demographic variables, and the syndrome of burnout among nurses. Her findings suggested that burnout emotional exhaustion was associated with the

following personality variables: nurturance, abasement, achievement, and succorance. In addition these variables were found to be negatively correlated with a dimension of burnout-personal accomplishment.

Dames (1983) explored the relationship between selected personality characteristics, demographics, and burnout, using the Spielberger Trait Anxiety Index, the Gough Adjective Checklist, and the Maslach Burnout Inventory. The personality traits of intraception and nurturance had negative correlations with burnout; abasement, aggression and anxiety had positive correlations with burnout. Autonomy had no significant relationship with burnout. Pomales (1982) reported an inverse relationship between self-concept and burnout.

Keane et al. (1985) and McCranie et al. (1987) explored the relationship of psychological hardiness, demographics, and burnout using the Hardiness Test (Kobasa et al., 1984). They presented data supporting the hypothesis that hardiness may be an important personality variable based resistance resource for preventing burnout among hospital nurses. They compared samples of staff registered nurses working in intensive care units and non-intensive care units of a large metropolitan hospital. Burnout consistently was negatively correlated with psychological hardiness. This finding supports hardiness as a generalized resistance resource for nurses working in diverse patient care settings.

Social Support

Effective social support systems are consistently recommended as a means of coping with job-related stress and preventing burnout. In 1982, Kimmel reported that nurses who perceived greater emotional support than-

demands at home did not experience different levels of burnout than nurses who experienced greater household demands than emotional support at home.

Paredes (1982) studied the effects of social support and psychological resources on the relationship between burnout and job dissatisfaction. The findings showed a significant negative relationship between supervision and co-worker support and burnout. Supervisor support was more significant in burnout reduction than co-worker or off-the-job support. Nurses who reported high levels of perceived psychological support appeared to benefit most from social support in terms of burnout reduction and job satisfaction.

Kanner, Kafry, and Pines (1981) and Pines, Aronson, and Kafry (1981) found that on-the-job and off-the-job social support were negatively related to burnout. Constable and Russell (1986) measured supervisor support and found that this variable was a major predictor of burnout. However, there was a significant association only with the emotional exhaustion dimension of burnout. These results indicate that high levels of support from supervisors can directly decrease feelings of emotional exhaustion and, therefore, affect the potential for burnout among nurses. In addition, their findings indicated significant moderating effects of supervisor support on the relationship between job enhancement and emotional exhaustion.

Finally, Chiriboga and Bailey (1986) reported that nurses who relied more on their supervisor for support proved more likely to report burnout. Additionally, reliance on co-worker support also correlated

with burnout. The correlations between inadequate psychological support and higher burnout are consistent with the findings of Edelwich and Brodsky (1983), Freudenberger and Richelson (1980), and Pines, Aronson, and Kafry (1981).

Coping Behavior

Another important variable in the study of burnout is coping behaviors used to reduce job stress. Kimmel (1982) measured coping with the Ways of Coping Scale by Lazarus as well as role conflict, role ambiguity, household support, demographic characteristics and burnout. His sample included head nurses, supervisors, staff nurses, licensed practical nurses, and nurses aids from a metropolitan hospital in New York. He reported that coping variables were the best predictors of burnout. Chiriboga and Bailey (1986) also measured coping with the Ways of Coping Scale, and burnout. Their results indicated that the nurses most vulnerable for burnout are younger and unmarried, work in critical care units, have less involvement in work conditions, experience more work hassles and distractions in the work place, and are more reliant on nursing supervisor for support. In addition, these nurses used anticipated coping which was significantly associated with burnout. However, because only one variable out of nine measures of coping strategies contributed significantly to burnout in their study, they concluded that coping variables were not the best predictors of burnout. In contrast, Stone et al. (1984) found that nurses endorsing a higher number of effective coping skills suffer less burnout.

Organizational Characteristics

The organization variables include workstress, the work environment, job enhancement and job satisfaction.

Work stress

Work stress has been identified as another contributing factor of burnout. It has been consistently reported that (Chiriboga & Bailey, 1986; Jenkins & Ostehya, 1986) nurses who experienced more frequent work-related stress reported greater burnout. According to Chiriboga and Bailey (1986), the work stress variables were second only to work environment measures in their degree of contribution to the explained variance in burnout. Work hassles and work distractions were the significant contributors. The more hassled the nurses felt, the more likely they were to feel burned out. It is important to point out that these are not the big stressful events; they are the smaller day-to-day hassles that can exert a cumulative effect. The distraction variable focused on trivial things: interruptions in the nurse's work, due to physicians, nursing staff, or visitors. Nurses who reported more hassles also reported more burnout. Their findings suggest that distracting and annoying day-to-day stress in the hospital work environment exerted the major stress on nurses, and that may lead to burnout.

Work Environment

Work environment variables including worker involvement, type of unit, type of hospital, amount of patient contact and job enhancement (variety of tasks and new approaches, autonomy, clarity, physical comfort and work pressure) are strongly associated with burnout. Worker

involvement was the most important variable and explained the greatest proportion of variance in burnout suggesting that when staff nurses feel a low involvement in work, they are most at risk of burnout (Chiriboga & Bailey, 1986). Burnout has been shown to be related to the type of unit. There is evidence that units that provide fewer demands on the nurse may potentiate a condition leading to Burnout (Chiriboga & Bailey, 1986). In addition, nurses who work in the private hospital are more likely than nurses employed by a district hospital to report burnout (Chiriboga & Bailey, 1986).

Researchers have found that more hours worked and more hours of direct patient contact increased the risk of burnout (Dames, 1983; Des, 1981). In addition, they also stated that the more hours working with patients with grave prognoses, the higher the burnout scores.

The results offered by Constable and Russell (1986) suggested that job enhancement was significantly correlated with burnout. This finding indicates that nurses are more susceptible to burnout when working in environments where there is a lack of variety and new approaches, there is a lack of encouragement to be self-sufficient, rules and policies are not clearly communicated, tasks are not clearly understood, and the work environment is not considered comfortable and attractive. In addition, work pressure was also positively associated with burnout-emotional exhaustion. Critical care nurses experiencing burnout perceive the critical care environment with little support and the events within the unit as a threat. Consequently, the critical care nurse expects the worst (Stone et al., 1984).

Job Satisfaction

The study of job satisfaction has evolved since the early 1900s. The earlier work was done by Taylor (1911) who determined that job satisfaction was associated with the amount of pay earned. This research began during the industrial revolution when workers were equated to machinery and efficiency was the expectation (Slavitt, Stamps, Piedmont, & Haase, 1978).

In the 1930s a humanistic-sociological approach to job satisfaction emerged. Work satisfaction was established as an oversatisfaction with life (Hoppock, 1935). A cross-sectional study of industrial workers with similar abilities, interests and job preparation revealed that an employee's adaptability to the situation, the employee's socioeconomic group identification, ability to relate to others, and the nature of the work were associated with work satisfaction. The psychological basis for job satisfaction was established by the Hawthorne studies (Mayo, 1945). These studies found that group interaction was the major determinant of job satisfaction (Slavitt et al., 1978).

One theory that is widely used today in studying job satisfaction is the motivation-hygiene theory (Herzberg, 1968). Motivators was the term Herzberg used to identify job satisfiers because they were effective in contributing to the individual functioning at a higher level and resulted in job satisfaction. Examples of motivators include responsibility, advancement and recognition. Hygiene factors was the term used to identify lower level needs because if not met, they added to dissatisfaction but when met did not contribute to satisfaction.

Examples of hygiene factors include salary, supervision, policy, and working conditions.

The theoretical conceptualization of job satisfaction by Herzberg has been studied extensively among nurses (Hinshaw & Atwood, 1984, 1987; Slavitt, Stamps, Piedmont, & Haase, 1978). Hinshaw and Atwood (1987) reviewed the job satisfaction literature and identified 19 significant factors relating to job satisfaction which were divided into two categories: personal and work-related characteristics. Personal characteristics included age, gender, intelligence, educational level, experience as a nurse, tenure and position in the hierarchy. Work related characteristics included the specialty area, nursing care delivery model, supervision, tasks, outcomes and pay. These researchers concluded that although these variables have been identified as significantly associated with job satisfaction, the relative impact of the personal and organizational variables acting directly and indirectly with job satisfaction has not been determined.

The more relevant theory of job satisfaction related to this study is the person-environment fit model of occupational stress (French, Rodgers, & Cobb, 1974). This theoretical approach relates occupational stress to job satisfaction. As a result of the interaction between the person holding a job and the environment in which he or she is employed with good person-environment fit, the job provides the necessary needs of the individual (salary, fringe benefits, social involvement, opportunity to achieve, and a sense of self worth). On the other hand, if the job is too strenuous or too demanding, job stress and burnout may result. Job

satisfaction is described as the result of a good person-environment fit (Vachon, 1987).

There are only two studies to date linking job dissatisfaction and burnout for nurses. Job dissatisfaction accounted for the largest variance in burnout in a dissertation study conducted by Parades (1982). Younger age, low psychological resources, shorter length of time on the hospital unit and less social support also contributed to the total variance. In addition, nurses experiencing burnout are found to be dissatisfied with their jobs because there are limited opportunities for personal growth on the job (Stone et al., 1984).

Theoretical Framework

The burnout model proposed by the researcher is an adaptation of the burnout model offered by Perlman and Hartman (1982) which integrates many theoretical models. It evolved from Selye's (1974) identification of stimuli and stressors, the definition of stress as the general adaptation syndrome, as the theory that too much stress may lead to maladaptation. The model is further grounded in a framework proposed by House and Wells (1978), Beehr and Neuman (1978) and Matteson and Ivancevich (1979).

Perlman and Hartman (1982) posited a transactional model of burnout and this appears to be the trend in recent years (Cherniss, 1980a; Chiroboga & Bailey, 1986; Cooper, 1986; Courage & Williams, 1987; Cox & McKay, 1981; Fletcher & Payne, 1980; Golembiewski et al., 1986; Harrison, 1983). The major theme of the transactional model relates to the conceptualization of stress and burnout as the result of a transaction

between individual worker needs and resources and the demands, constraints, limitations, and/or facilities within the work environment. Their model is broad and allows an examination of personal and organizational-work variables which have been studied individually or in combination in the burnout literature from 1977 to the present. In this model personal, as well as organizational-work variables that are subjectively perceived, are conceptualized.

Using Selye's (1974) definition of stress as "The nonspecific response of the body to any demand made upon it" (p. 41), Perlman and Hartman (1982) built a theoretical model of psycho-social organizational mediated adaptation congruent with Selye's initial work. The Perlman and Hartman (1982) model incorporated three major symptom categories of stress that are reflected by the three dimensions of burnout: (a) physiological (focusing on physical symptoms and perceptions of reduced personal accomplishment); (b) affective cognitive (focusing on attitudes and feelings and emotional exhaustion); and (c) behavioral (focusing on symptoms or behavior related to depersonalized care of the recipient of care). The model, which has a cognitive and perceptual focus, consists of a linear progression of four stages of stress which include the degree to which the situation is conducive to stress, the perception of job stress, response to stress, and outcome of stress. Groupings of significant personal variables and organizational variables are related to each stage. In the first stage of stress the degree the situation is conducive to stress is a function of personal variables of ability, time, family demands, and job expectations and organizational

variables of workload, expected role performance and role ambiguity. The combination of the variables age and education are theorized by Perlman and Hartman (1982) to represent the variable ability. The combination of the variables marital status and life events is theorized by Perlman and Hartman (1982) to represent the variable family demands. The variable job expectation is theoretically viewed by Perlman and Hartman (1982) to represent perception of growth for helping professionals. In the second stage of stress the level of perceived job stress is a function of personal variables of personal work needs, and personality and organizational variables of supervision, work group norms, opportunity for advancement and dealing with colleagues at work. In the third stage of stress the response to stress is a function of physiological, affective and cognitive responses manifested as burnout. This stage is related to personal variables including commitment to career, and health and organizational variables that include pay, support from peers, supervision, and organizational climate and the economic and market condition. In the fourth stage, burnout is related to work outcomes including job satisfaction and psychological response.

The model includes a complete representation of transactional processes including personal characteristics, organizational characteristics, the degree to which a situation is likely to be stressful, perception of organizational job stress, and response to job stress in understanding the etiology of burnout. Although the conceptualization of burnout offered by Perlman and Hartman (1982) is fairly comprehensive there are limitations with respect to the operationalization of two variables labelled personal work needs and work group norms. Multiple indicators need to be used to operationalize these

variables that are identified in the literature review for this study that have a meaningful relationship in the process that leads to job dissatisfaction and burnout. For example, according to the literature, meaningfulness of work, responsibility for work outcomes and knowledge of work outcomes have a direct relationship to job satisfaction (Herzberg, 1968; Hinshaw & Atwood, 1984, 1987; Oldham, Hackman, & Pearce, 1976). Because job dissatisfaction has been linked to burnout, use of these multiple indicators of personal work needs seems warranted. In addition, according to the literature, autonomy, skill variety, task significance, and task identity have a direct relationship to the process of job satisfaction and job burnout (Cherniss, 1980a-b; Heifitz & Bersoni, 1983). Use of these variables to operationalize work group norms has theoretical support and is justified.

Another problem is that the model conceptualized by Perlman and Hartman (1982) has structural limitations of its components. Each variable affects only the next continguous variable in the model. They did not allow for the freedom of some variables having direct and indirect causal relationships to more than one outcome variable. For example, according to the literature, job satisfaction has a direct relationship to pay, dealing with others at work, opportunity for advancement, and economic market conditions (Jayaratne & Chess, 1983; Oldham, Hackman, Pearce, 1976; Paredes, 1988) but from Figure 1-1 it would appear that burnout has a direct relationship to pay, support from others, and economic market conditions and that job stress has a relationship with opportunity for advancement. In addition, Perlman and Hartman (1982) seemed to suggest that burnout precedes job satisfaction, but other theoretizations of burnout would equate it with what Perlman

and Hartman defined as maladaptation, manifested as an observable form of ineffective coping.

A more logical approach is the expansion of the model offered by Perlman and Hartman (1982) to a path-analytical model that will allow for the analysis of direct and indirect effects of personal and organizational variables simultaneously across stages. There is a need to attend to a more comprehensive causal model of stress and burnout that includes personal and organizational variables as well as stages of stress, job satisfaction, and psychological response in understanding the etiology of burnout.

CHAPTER III
METHODOLOGY

This study was designed to collect data and to test a path analytical model of the theoretical conceptualization of burnout for critical care nurses. The model of interest was an expansion of the model offered by Perlman and Hartman (1982) that allowed analysis of direct and indirect effects of exogenous and endogenous variables using path analysis. Five research study questions were used to guide this study in an exploratory examination of the full model of burnout.

This chapter is divided into four section. In the first section, the sample of respondents is described. The study design and procedures used to collect the data are included in the second section of the chapter. The instrumentation is described in the third section. The fourth section includes a description of the statistical analysis of the five research questions used to guide the study in examining the model.

Sample of Respondents

Selection of research participants. Permission to conduct the study was first obtained through the Institutional Review Board of the University Health Center. Following approval, a convenience sample of hospitals was selected. Eligible hospitals (N = 14) were identified from the 1985 Hospital Data Report published by the North Central Florida Health Planning Council. Permission to conduct the study was then obtained through the Nursing Research Committees of hospitals located in North Eastern, North Central and Southern regions of the state of

the state of Florida. Administrators of five of the selected hospitals declined to participate due to the perceived threatening tone of the Job Diagnostic Survey Questionnaire and the burnout questionnaire. The final sample consisted of nine hospitals which are licensed for between 250 and 450 beds, and are located in Northeastern, Northwestern, North central, and Southern regions of Florida. All staff nurses employed in the nine hospitals who fit the criteria of working on a critical care unit and having worked full time for at least three months were invited to participate in the study. During the months of September-November, 1989, the burnout test battery was presented to the nurses by the author during a scheduled staff meeting (Appendix A). Consent for participation was then procured from the critical care nurse employed in these settings (Appendix B).

A total of 375 female critical care registered staff nurses were given a package of materials with a cover letter requesting their participation. A total of 330 nurses agreed to participate by returning complete questionnaires (86%). Thirty questionnaires were not fully completed and were excluded from the data analysis. Three hundred questionnaires were usable for data analysis.

The demographic characteristics of the critical care staff nurses (age, marital status, sex, and education) are presented in Table 3-1. These data revealed that all the critical care nurses in the sample were female and that 75% of the nurses were between the ages of 20 and 39 with 32% under the age of thirty. The majority of the staff nurses held an associate degree (50%) in nursing (ADN) and 10% were diploma graduates. Only 34% were baccalaureate graduates in nursing.

The duration of experience as a staff nurse in critical care is presented in Table 3-2. The duration ranged from 3 months to 30 years

Table 3-1

Characteristics of Critical Care Staff Nurses: Sex, Age, and Education (N = 300)

Characteristics	Number	Percent
Sex:		
Female	300	100.0
Marital Status:		
Single	71	23.7
Married	188	62.7
Separated	6	2.0
Divorced	35	11.7
Total	300	100.1
Age:		
20 - 29	96	32.0
30 - 39	129	43.0
40 - 49	60	20.0
50 - 59	14	4.7
60 or over	1	0.3
Total	300	100.0
Education:		
ADN	149	50.0
BSN	102	34.0
Diploma	31	10.3
Some graduate work	18	6.0
Total	300	100.3

Table 3-2

Duration as Staff Nurse in Critical Care (N = 300)

Number of years	Number	Percent	Cumulative %
Duration as staff nurse in critical care:			
3 - 6 months	60	20	20
7 months - 1 year	49	16.3	36.3
13 - 18 months	11	3.7	40.0
19 months - 2 years	2	.7	40.7
2 - 3 years	15	5.0	45.7
3 - 4 years	25	8.3	54.0
4 - 5 years	9	3.0	57.0
5 - 7 years	34	11.7	68.7
7 - 10 years	31	10.0	78.7
10 - 15 years	43	14.3	93.0
15 - 20 years	14	4.7	97.7
20 - 25 years	5	1.6	99.3
25 years +	2	.7	100.0
Total	300	100.0	100.0

with a mean of 6.86 years and a standard deviation of 5.53 years. Over 45% had 3 years or less of work experience as a staff nurse in critical care, and 46% had more than 4 years of experience.

Additional demographic information included the duration of experience as a staff nurse in critical care at the present institution and the number of hours working per week. The number of years of experience as a staff nurse in critical care at the present institution ranged from 1 month to 25 years with a mean of 4.75 years and a standard deviation of 4.19 years. Over 67% had 5 years or less of work experience in critical care staff nursing at the present institution and 8% had more than 10 years of experience at the present institution (see Table 3-3). The number of hours working per week ranged from 36 hours to 72 hours with a mean of 38.16 hours and a standard deviation of 7.95 hours. It was revealed that over 16% had 42 hours or more per week working time (Table 3-4).

Study Design and Procedures

The design structure for the path analysis methodology was correlational, involving selection of a number of psychometric instruments to operationalize each of the variables specified in the theoretical framework and administration of these instruments to all subjects in the study. Subjects were asked to complete five questionnaires, including the demographic sheet, and Work Survey Instrument, the Daily Hassles Scale, the Job Diagnostic Survey, the Hardiness Scale, and the Burnout Inventory. Each nurse self-administered the burnout test battery during an off-work, scheduled, thirty-minute period. The test battery included a set of standardized instructions for each of the measures. All subjects were guaranteed anonymity.

Table 3-3

Years of Experience as a Critical Care Staff Nurse at the Present Institution

Number of years	Number	Percent
6 months or less	16	5.3
7 months - 1 year	29	9.7
13 months - 2 years	60	20.0
2 - 5 years	97	32.3
5 - 10 years	74	24.7
10 - 15 years	16	5.3
15 - 20 years	7	2.3
20 - 25 years	1	.3
Total	300	100.0

Table 3-4

Work Hours Per Week (N = 300)

Number of hours	Number	Percent
40 hours	249	83.0
41 - 42 hours	3	1.0
43 - 44 hours	5	1.7
45 - 48 hours	28	9.4
49 - 50 hours	8	2.6
51 - 60 hours	5	1.6
61 - 70 hours	2	.7
Total	300	100.0

Instrumentation

A demographic questionnaire and work survey devised by the researcher and four widely used standardized instruments including The Daily Hassles Scale, Job Diagnostic Survey (JDS), Psychological Hardiness Test, and Maslach Burnout Instrument were used in this study in order to assess individual critical care nurses' perceptions of personal and organizational variables in the work environment, levels of stress including a situation conducive to stress, perceived job stress, and burnout and outcomes of the stress response including job satisfaction and internal job motivation.

Demographic Questionnaire

Description. A six-item questionnaire was constructed in order to assess personal characteristics of the critical care nurses. The personal characteristics assessed were age, sex, marital status, education, duration as a staff nurse in critical care, duration as a staff nurses in critical care at the present institution, and the number of working hours per week in critical care nursing. Appendix C contains this instrument.

Use in this study. The personal variables, ability and time (tenure), were measured with items from the demographic questionnaire (Appendix C). The measurement of ability consisted of the sum of the duration of time as a staff nurse in critical care in months and the sum of the duration of formal education in nursing months. The measurement of tenure consisted of the numerical value of duration in months as a staff nurse in critical care and the duration in months as a staff nurse at their present institution. The means and standard deviation for the sample used in the present study are presented in Table 3-5.

Table 3-5

Psychometric Properties of Variables: Ability and Time

Variable	Number	Mean	Standard deviation
Ability	300	117.82	68.858
Time	300	139.33	103.192

Daily Hassles Scale

Description. The measurement of psychological stress through the use of the Hassles Scale theoretically approaches the role of cognitive appraisal in the stress and coping process (Lazarus & Folkman, 1989). In this approach, coping depends on how individuals appraise their everyday encounters with the environment with regard to the extent to which those encounters are perceived as threatening, harmful, or challenging. Everyday encounters are called hassles and are measured in the Hassles Scale. The Hassles Scale consists of 117 items used to measure the frequency and severity of a person's transactions with the environment that are considered by the individual to be stressful events; e.g., "How much of a hassle was this for you . . . overloaded with family responsibilities?" The scale takes approximately 10 minutes to complete. The response format is a four-point scale, ranging from "none" or not applicable to "extremely severe." The Daily Hassles Scale yields two scores: frequency, which is the number of hassles endorsed by the person without regard to severity and severity, which is the average severity rating of all items that have been identified. Eight factor-based subscales scores are also possible. They include future security, time pressures, work, household responsibilities, health, inner concerns, financial responsibilities, and neighborhood/environmental.

Psychometric Properties Of Daily Hassles Scale

Reliability. Kanner et al. (1981) reported a test retest reliability coefficient of .79 on a sample of 432 college students and a sample of 448 adults aged 20-60. There is no information available on the internal consistency of the scale.

Validity. In reference to construct validity, an important relationship has been explored between hassles and life events scores and the treatment of both as indicators of psychological stress. Kanner et al. (1981) provide the strongest evidence for construct validity of the Daily Hassles Scale in order to explain psychological symptoms and symptoms of somatic illness and emotional distress. His group found that the hassles scores were strongly related to both affective distress and psychological symptoms (.34). The Hopkins Symptom Checklist (HSCl) (Derogotis et al., 1974) correlated between .5 and .6 with the Daily Hassles Scale. Delongis et al. (1988) correlated hassles and somatic health status as dependent variables and found that daily hassles explained more variance than did life events.

Lazarus and Folkman (1989) performed a factor analysis of the Daily Hassles Scale, using the principal factor method with oblique rotation and generated eight factors: future security, time pressure, work, household responsibilities, health, inner concerns, financial responsibility, and neighborhood and environmental concern.

Use in the study. The personal variables family demands, health, the situational stress and job stress variables were measured with the Daily Hassles Scale on the basis that the scale contained factors that corresponded to the variables used in this study. Family demands were measured with the Daily Hassles Scale, items 1-4, 7-15, 19-23, 29, 35-38, 43, 45, 55, 58-59, 61-64, 70, 71, 73-76, 78-79, 82, 87, 90, 92-93, 103-108, and 110-112 that corresponded to three factors: household responsibilities, financial responsibility and neighborhood and environmental concern (Lazarus & Folkman, 1989).

Health was measured with the Daily Hassles Scale, items 16-18, 48, 49, 50, 53, 54, 56, 77, 91, and 98 that corresponded to the health factor (Lazarus & Folkman, 1989).

The degree to which the situation was conducive to stress was measured with items 5, 6, 24-26, 39-42, 44, 46-47, 51-52, 57, 60, 67-69, 85, 88-89, 94-97, 99-101, 109, 113-117, of the Hassles Scale that corresponded to the three factors inner concerns, future security, and time pressure (Lazarus & Folkman, 1989).

The level of perceived job stress was measured with items 27-28, 30-34, 65, 66, 72, 80-84, 86, and 102 pertaining to work hassles of the Hassles Scale (Lazarus & Folkman, 1989).

Critical care nursing faculty, critical care graduate nursing students, and two top nursing management members of two critical care intensive care units of a regional hospital were asked to rate and evaluate this scale for use in this study. On the basis of the reliability and validity data available, use of the Daily Hassles Scale as a measure of family and life demands, health, situation conducive to stress, and work stress seemed justified. The means, standard deviations and coefficient alpha estimates for the variables for the sample used in the present study are presented in Table 3-6. Appendix D contains instrument directions and sample items.

Job Diagnostic Survey (JDS)

Description. The JDS is composed of 83 items used to diagnose existing jobs to determine if and how they might be redesigned to affect employee motivation and performance and to evaluate the effects of job changes on employers. The measure is based on a theory of how a job affects worker motivation and provides measures of objective job dimensions, individual psychological states related to these dimensions,

Table 3-6

Psychometric Properties of Variables: Daily Hassles Scale

Variable	Number	Mean	Standard deviation	Alpha
Family demands	300	.751	.408	.701
Health	300	.501	.396	.699
Situational stress	300	.717	.387	.703
Job stress	300	.659	.427	.714

affective reactions of employees to the work setting and the job, and the need of the individual for growth. The scale is appropriate for grades 8 and over. The subjects respond to a seven-point response scale used throughout the instrument.

The JDS yields scores on 18 subscales. All 18 of these subscales were used as measures of variables in the present study. Table 3-7 relates JDS subscales to variables and gives sample items. The JDS provides measures of the five core work dimensions which include skill variety, task identity, task significance, autonomy and feedback from the job itself. Two additional measures are included for two supplementary dimensions which include feedback from agents and dealing with others. They are defined as follow:

Skill variety is the degree to which a job requires a variety of different activities in carrying out the work, which involve the use of a number of different skills and talents of the employee.

Task identity is the degree to which the job requires completion of a "whole" and identifiable piece of work--i.e., doing a job from beginning to end and with a visible outcome.

Task significance is the degree to which the job has a substantial impact on the lives or work of other people--whether in the immediate organization or on the external environment.

Autonomy is the degree to which the job provides substantial freedom, independence, and discretion of the employee in scheduling the work and in determining the procedures to be used in carrying it out.

Feedback from the job itself is the degree to which carrying out the work activities required by the job results in the employee

Table 3-7

Job Diagnostic Survey Subscales, Related Variables and Sample Items

Subscale	Variable in this study	Sample Item
Total growth need strength	Job expectations	"Indicate the degree to which you would care to have this characteristic present in your job; e.g., opportunities for personal growth and development in my job."
Meaningfulness of work	Personal work needs	"Most of the things I have to do on this job seem useless or trivial to me."
Responsibility for work outcomes		"I feel a very high degree of personal responsibility for the work I do on this job."
Knowledge of work results		"Most people on this job have trouble figuring out whether they are doing a good or a bad job."
Feedback from the job itself	Expected performance and role ambiguity	"Just doing the work required by the job provides may choices for me to figure out how well I am doing."
Feedback from agents on the job		"Supervisors often let me know how well they think I am performing on the job."
Skill variety	Work group norms	"The job requires one to use a number of complex or high-level skills."
Task identity		"The job provides me the chance to completely finish the pieces of work I begin."

Table 3-7--continued

Subscale	Variable in this study	Sample Item
Task significance	Work group norm	"The job is one where a lot of the other people can be affected by how well the work gets done."
Autonomy	Work group norm	"The job gives me considerable opportunity for independence and freedom in how I do the work."
Dealings with others at work	Dealing with colleagues	"The job requires a lot of cooperative work with other people."
Supervision satisfaction	Supervision	"The amount of support and guidance I receive from my supervisor.
Satisfaction with work growth and advancement	Opportunity for advancement	"The amount of personal growth and development I get in doing my job."
Pay satisfaction	Pay	"The amount of pay and fringe benefits I receive.
Satisfaction with peers and co-workers	Support from others at work	"The chance to get to know other people on the job."
Satisfaction with job security	Organizational climate and the economic-market condition	"How secure things look for me in the future in this organization."
General job satisfaction	Job satisfaction	"I am generally satisfied with the kind of work I do in this job."
Internal job motivation	Psychological response to job stress	"Most people in this job feel a great sense of personal satisfaction when they do the job well."

obtaining direct and clear information about the effectiveness of his or her performance.

Feedback from agents is the degree to which the employee receives clear information about his or her performance from supervisors or from coworkers.

Dealing with others is the degree to which the job requires the employee to work closely with people in carrying out the work activities.

The JDS also measures three psychological states that are associated with the core job dimensions. These include experienced meaningfulness of the work, experienced responsibility for work outcomes and knowledge of work results. They are defined as follow:

Experienced meaningfulness of the work. The degree to which the employee experiences the job as one which is generally meaningful, valuable, and worthwhile.

Experienced responsibility for work outcomes. The degree to which the employee feels personally accountable and responsible for the results of the work he or she does.

Knowledge of results. The degree to which the employee knows and understands, on a continuous basis, how effectively he or she is performing the job.

Personal, affective reactions or feelings a person obtains from performing the job include general satisfaction, internal job motivation, and specific satisfactions (job security, pay and other compensations), social satisfaction with peers and coworkers, supervision and opportunity for personal growth and development on the job. They are defined as follow:

General satisfaction. An overall measure of the degree to which the employee is satisfied and happy with the job.

Internal job motivation. The degree to which the employee is self motivated to perform effectively on the job--i.e., the employee experiences positive internal feelings when working effectively on the job, and negative internal feelings when doing poorly.

Specific satisfaction. A number of short scales which provide separate measures of satisfaction with:

(a) Job security

(b) Pay and other compensation

(c) Peers and coworkers ("social" satisfaction)

(d) Supervision

(e) Opportunities for personal growth and development on the job ("growth" satisfaction)

Finally, the JDS measures the strength of the individual's desire to obtain growth satisfactions from his or her work. This measure is called the growth need strength index and is viewed as an individual characteristic which is predicted to influence how well a worker will react to a job with a high motivating potential (Hackman & Oldham, 1978).

Psychometric Properties of JDS

Reliability. Internal consistency reliabilities for the eighteen subscales are reported as generally satisfactory with a range from a high of .88 to a low of .56. The term scale is used to refer to the summary score obtained for each variable measured by the JDS. On the basis of these results the reliability estimates are satisfactory. The psychometric properties of the variables on this sample are presented in Table 3-8.

Table 3-8

Psychometric Properties of Variables: Job Diagnostic Survey

Variable	Number	Mean	Standard deviation	Alpha
Job expectations (Total growth strength need)	300	4.103	2.446	.714
Meaningfulness of work	300	5.750	.844	.669
Responsibility for work outcomes	300	5.750	.653	.680
Knowledge of work results	300	5.000	.946	.679
Expected role performance and role ambiguity (Feedback from the job itself and feedback from agents on the job)	300	4.668	.898	.670
Skill variety	300	5.916	.818	.675
Task Identity	300	4.212	1.112	.691
Task significance	300	6.152	.772	.684
Autonomy	300	5.090	.905	.689
Supervision	300	4.950	1.270	.677
Dealing with others at work	300	6.116	.707	.700
Opportunity for advancement	300	5.459	.893	.661
Pay satisfaction	300	3.903	1.608	.693

Table 3-8--continued

Variable	Number	Mean	Standard deviation	Alpha
Social support at work	300	5.639	.766	.673
Job security satisfaction	300	5.207	1.224	.695
Job satisfaction	300	4.949	1.110	.675
Internal job motivation	300	5.874	.640	.680

Validity. Convergent validity was demonstrated by Hackman and Oldham (1978). Assessments of the specified jobs on the job dimensions were made by the employers who worked on those jobs as well as by the supervisors and the researchers. The ratings of each group were averaged for each job, and then correlations were computed. The median of the correlations between employees and supervisors is .51; between employers and observers is .63; and between supervisors and observers is .46. In general, the ratings of the three groups converge moderately well.

The validity of the JDS has been demonstrated further by data that confirm hypotheses about the relationship of certain job characteristics and experienced burnout. Hackman and Oldham (1974) found scores on the JDS and the Maslach Burnout Inventory (MBI) were closely correlated. In particular, high scores on the job dimension "feedback from the job itself" were associated with low scores on emotional exhaustion and depersonalization, and were high scores on personal accomplishment of the burnout inventory (Maslach & Jackson, 1986). Another job dimension, "dealing with others," was found to be weakly correlated with emotional exhaustion. A third job dimension, "task significance," was highly positively correlated with personal accomplishment.

Additional validation of the JDS is provided by data that confirm hypothetical relationships between the JDS measure of "growth satisfaction" and burnout. Scores on the JDS measure on "growth satisfaction" were negatively correlated with emotional exhaustion and depersonalization and positively correlated with personal accomplishment. In addition, employees scoring low on the JDS subscale of "experienced meaningfulness of the work" scored higher on depersonalization and lower on personal accomplishment. With respect to coworkers, employees scoring

low on the JDS subscale of "peer and coworker satisfaction" scored high on emotional exhaustion and depersonalization, and low on personal accomplishment.

Further evidence of the validity of the JDS has been obtained by distinguishing its subscales by off diagonal median correlations which provide an indication of discriminant validity of the items. The range is from .12 to .28. In addition, distinguishing the JDS job satisfaction subscale from measures of other psychological constructs including burnout has been supported. Job satisfaction had a moderate negative correlation with both emotional exhaustion (-.23) and depersonalization (-.22), as well as slightly positive correlation with personal accomplishment (.17).

Finally, a preliminary study has been performed in which factor analysis was used to determine if the JDS measures a multidimensional construct. The results of these studies are not enough to eliminate the conceptualization of a multidimensional construct of job characteristics measured by the JDS. Additional research is required to determine this issue. Despite the high intercorrelations among the subscales, Hackman and Oldham (1978) suggest that separate subscale interpretations are probably warranted but should be made cautiously.

On the basis of the reliability and validity data available, use of the JDS as a measure of personal and organizational variables seemed justified.

Use in this study. The personal variables including job expectations, and personal work needs and organizational variables, including expected performance and role ambiguity, work group norms, dealing with colleagues, supervision, opportunity for advancement, pay,

support from others, organizational climate and the economic-market condition, general job satisfaction and psychological response to burnout (internal work motivation) were measured with the JDS on the basis that the scale contained measures that closely resembled the variables used in this study. In addition, critical care nursing faculty, critical care graduate nursing students, and two top nursing managment members of two critical care intensive care units of a regional hospital were asked to rate and evaluate this scale for use in this study. On the basis of their judgement, and the decision of this researcher, use of the JDS as a measure of the personal and organizational variables seemed justified. Appendix E contains instrument directions and sample items.

Psychological Hardiness Test

Description. Hardiness is defined as a learned ability to cope with a wide variety of stressful situations in such a way that the stresses are transformed to a positive outlook, or negative stresses, that cannot be realistically transformed, are met with a plan to eliminate them. Another way of describing "hardiness" is transformational coping which is a learned process. The amount of hardiness one has acts as a buffer to keep stress from changing into strain, and strain from changing into illness. A sample item of the Psychological Hardiness Test includes, "I often wake up eager to take up my life where it left off the day before." The measurement of hardiness consists of 50 rating-scale items developed by Kobasa, Maddi, Donner, Merrick, and White (1984). The 50 items were derived from a factor analysis of six existing personality scales which have been used to measure commitment, control, and challenge dimensions of hardiness. The Hardiness Test was standardized on a population of 223 women and 1511 men who for the most part were professionals--business executives, lawyers, white collar professional.

The hardiness scores is computed by transforming raw subscale scores into standard scores and adding across the three subjscales to produce a total score for each subject. Commitment is defined as the ability to commit to the task or project or relationship. Control is defined as the realistic knowledge and use of the amount of control or lack of control that one has in this and other situations. Challenge is defined as the use of both commitment and control in order to see events, relationships, problems and opportunities as challenges rather than as trouble.

Psychometric Properties of Psychological Hardiness Test

Reliability. As to reliability, the internal consistency estimates based on 10,000 subjects over the past four years from all walks of life and a multitude of circumstances has yielded a coefficient alpha of .92 for total hardiness score a mean of 74.02 and a standard deviation of 9.60. Stability appears to be about .960 over a period of two weeks. The internal consistency estimate for this sample was .89 with a mean score of 69.31 and a S.D. of 11.01.

Validity. The validity of the hardiness test has been demonstrated by data that confirm hypotheses about the relationship of hardiness to burnout. Keane et al. (1985) reported that nurses who exhibited less psychological hardiness reported more burnout. In addition, they reported that perceived job stress and hardiness were significant additive predictions of burnout. Hardiness appeared to have beneficial effects on decreasing burnout.

Kobasa et al. (1982) related commitment and coping in stress resistance among lawyers and identified that increases in strain are significantly determined by personality characteristics of alienation (vs. commitment). In another study, Kobasa (1979) reported discriminant function analysis with the prediction that high stress/low illness executives show by comparison with high stress/high illness executives,

more hardiness, that is, have a stronger commitment to self, an attitude of vigor toward their environment, a sense of meaningfulness, and an internal locus of control.

This evidence suggests that on the basis of the reliability estimates and validity data available, the total hardiness scores provides a measure of general psychological hardiness. However, there is less empirical support for the interpretation of separate subscale scores of control, commitment, and challenge.

Uses in this study. The personal variable personality was measured with the Hardiness Test on the basis that this scale would determine if hardiness or transfunctional coping acts as a buffer to keep situations conducive to stress from changing into job stress, and job stress from changing into burnout among critical care nurses. In addition, critical care nursing faculty, critical care graduate students and two top nursing management members of two critical care intensive care units of a regional hospital were asked to rate and evaluate this scale for use in this study. On the basis of their judgement and the discretion of this researcher, use of the Hardiness Test is a measure of the personal variable of personality seemed justified. Appendix G contains instrument directions and sample items.

Maslach Burnout Instrument (MBI)

Description. Burnout, according to Maslach and Jackson (1986), is a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment, which often affects helping professionals (e.g., teachers, nurses and therapists). A major aspect of the burnout syndrome is increased feelings of emotional exhaustion; as emotional reserves are depleted, helping professionals feel that they are no longer able to give of themselves at a psychological level. In addition, the development of depersonalization--i.e., negative, cynical attitudes and feelings about

one's own clients occurs. A third aspect of the burnout syndrome is reduced personal accomplishment, which refers to the tendency to evaluate oneself negatively, especially with regard to one's work with patients. Helping professionals may feel unhappy about themselves and dissatisfied with their accomplishments on the job. The MBI is designed to measure the three components of burnout. Each aspect is measured by a separate subscale. The Emotional Exhaustion subscale assesses feelings of being emotional, over extended, and exhausted by one's work. The Depersonalization subscale measures an unfeeling and impersonal response towards recipients of one's service, care, treatment, or instruction. The Personal Accomplishment subscale assesses feelings of competence and successful achievement in one's work with people. Each scale further includes an expression of frequency using a six-point response format. The MBI consists of a total of 22 items.

Psychometric Properties of MBI

Reliability. Reliability coefficients of internal consistency ranged from .71 to .90. Test retest reliability (2-4 weeks apart) ranged from .82 to .53. Standard errors of measurement ranged from 3.16 to 4.99. Reliability estimates, therefore, appear sufficient. The internal consistency of the emotional exhaustion subscale on the sample in this study was .72.

Validity. Convergent validity was determined in a variety of ways. First, behavioral ratings made by an acquaintance of the individual such as a coworker or a spouse were correlated with MBI scores. The validity of the job is demonstrated further in studies confirming hypotheses about the relationships between various job characteristics and experienced burnout. In one study, it was predicted that the greater number of clients one must care for, the higher the burnout scores on the MBI (Maslach & Pines, 1977; Maslach & Jackson, 1982, 1984a-b).

The JDS and the MBI scores were correlated in research performed by Pines and Kafry (1978). High scores on the job dimension, feedback from the job itself, were correlated with low scores on depersonalization and emotional exhaustion and high scores on personal accomplishment. The dimension, "dealing with others," relates to the degree to which a job requires the employee to work closely with people in carrying out the job activities. High scores on this job dimension were weakly correlated with emotional exhaustion. Task significance, a third dimension, assesses the degree to which the job has an impact on the lives of other people. High scores on this dimension were positively correlated with personal accomplishment.

Further validation of the MBI has been provided by data that confirms hypotheses related to experienced burnout and various outcomes or personal reactions. In a study of nurses, and social service and mental health workers scores on the JDS measure of "growth satisfaction" were negatively correlated with depersonalization and emotional exhaustion and positively correlated with personal accomplishment. Low scores on the JDS subscale of "experienced meaningfulness of the work" scored higher on depersonalization and lower on personal accomplishment. In addition, low scores on the JDS subscale of "knowledge of results" were correlated with high scores on emotional exhaustion and depersonalization and with low scores on personal accomplishment.

Support for the hypotheses predicting that burnout would be related to the desire to leave one's job was supported by Maslach and Jackson (1979, 1982, 1984a-b). In addition, the impairment of one's relationships with people in general, both on and off the job was highly correlated with emotional exhaustion. Low scores on the JDS subscale

peer and coworker satisfaction correlated with high scores on emotional exhaustion and depersonalization, and low on personal accomplishment.

Additional studies have linked burnout to outcomes of stress including increased use of alcohol, drugs, and insomnia. Individuals scoring high on emotional exhaustion were also rated as having problems with insomnia. Police officers in one study were more likely to describe having a drink to cope with stress if they had high scores on emotional exhaustion. If they scored low on personal accomplishment they were likely to report using tranquilizers.

Finally, further research determining the discriminant validity of the MBI has been performed in order to distinguish burnout from measures of other psychological constructs that might be assumed to be confounded with burnout. Scores from the general satisfaction subscale measured by the JDS and scores of the MBI has a moderate negative correlation, -.23 (emotional exhaustion); -.22 (depersonalization as well as slightly positive correlations with personal accomplishment (.17). Low correlations between burnout subscale scores and other measures of job satisfaction have been reported in other studies as well.

The MBI appears to be the best scale available in measuring burnout. It is a well constructed instrument and the validity and reliability data are sufficient to provide meaning and stability of the construct.

Use in this study. The variable burnout-emotional exhaustion was measured with the Maslach Burnout Inventory on the basis that burnout was defined as a syndrome with three dimensions: emotional exhaustion, depersonalization, and personal accomplishment and this measure is consistent with that definition. In addition, the use of the Maslach Burnout Inventory permits some comparability between studies among helping professionals including nurses because it is widely used.

The cognitive, affective and physiologic response of stress, referred to as burnout, was measured with the Maslach Burnout Inventory (Maslach & Jackson, 1986). A sample item of the Maslach Burnout Inventory for Emotional Exhaustion includes, "I feel emotionally drained from my work." Appendix I contains instrument directions and sample items.

Commitment and Workload

Description. Commitment to career was measured with one five point Likert item (Appendix F). Workload was measured with two five point Likert items (Appendix F).

Psychometric properties. Psychometric properties of these variables are presented in Table 3-9.

Use in this study. The personal variable commitment to career and the organizational variable workload were measured with three items that were designed by the researcher to closely resemble the variables used in this study among critical care nurses. Critical care nursing faculty, critical care graduate nursing students, and two top nursing management members of two critical care intensive care units of a regional hospital were asked to rate and evaluate these three items for use in this study. On the basis of their evaluation and the discretion of the researcher these items were used to measure commitment to career and workload. Table 3-10 presents a summary of the instrumentation of personal, organizational variables, and situation conducive to stress, job stress, burnout-emotional exhaustion, job satisfaction and internal work motivation variables used in the study.

Statistical Analysis

The five research questions listed in Chapter I (pg. 9) were used to guide this study in examination of the full model of burnout-emotional

Table 3-9

Psychometric Properties of Variables: Commitment and Workload

Variable	Number	Mean	Standard deviation	Alpha
Commitment	300	3.537	1.357	NE
Workload	300	4.097	.8038	NE

NE = Not estimated

Table 3-10

Instrumentation: Personal, Organizational Variables, Situation Conducive to Stress, Job Stress, Burnout, Job Satisfaction, and Internal Work Motivation

Variables in this study	Instrument	Items
Personal		
Ability	Demographic questionnaire	3, 4, 5
Time (tenure)	Demographic questionnaire	4, 5
Family demands	Daily Hassles Scale	1-4, 7-15, 19-23, 29, 35-38, 43, 45, 55, 58-59, 61-64, 70-71, 73-76, 78-79, 82, 87, 90, 92-93, 103-108, and 110-112
Job expectations	JDS	Section 6 (2-3, 6, 8, 10, 11) Section 7 (1-12)
Personal work needs		
Meaningfulness of work	JDS	Section 3 (4, 7), Section 6 (6)
Responsibility for work outcomes	JDS	Section 3 (1, 8, 12, 15) Section 5 (4, 7)
Knowledge of work results	JDS	Section 3 (5, 11) Section 5 (5, 10)

Table 3-10--continued

Variables in this study	Instrument	Items
Commitment to career	Work Survey	3
Health	Daily Hassles Scale	16-18, 48, 50, 53-54, 56, 77, 91, 98
Psychological hardiness	Hardiness Test	1-50
Organizational variables:		
Workload	Work Survey	1, 2
Expected performance and role ambiguity	JDS	Section 1 (6, 7) Section 2 (4, 7, 10, 12)
Work group norms:		
Skill variety	JDS	Section 1 (4), Section 2 (1, 5)
Task identity	JDS	Section 1 (3), Section 2 (3, 11)
Task significance	JDS	Section 1 (5), Section 2 (8, 14)
Autonomy	JDS	Section 1 (2), Section 2 (9, 13)
Dealing with colleagues	JDS	Section 1 (1), Section 2 (2, 6)

Table 3-10--continued

Variables in this study	Instrument	Items
Supervision	JDS	Section 4 (5, 8, 14)
Opportunity for advancement	JDS	Section 4 (3, 6, 10, 13)
Pay	JDS	Section 4 (2, 9)
Support from others at work	JDS	Section 4 (4, 7, 12)
Organizational climate and economic market condition (job security)	JDS	Section 4 (1, 11)
Degree situation conducive to stress	Daily Hassles Scale	5, 6, 24-26, 39-42, 44, 46-47, 51-52, 57, 60, 67-69, 85, 88-89, 94-97, 99-101, 109, 113-117
Perceived job stress	Daily Hassles Scale	27-28, 30-34, 65-66, 72, 80-84, 86, 102
Burnout:		
Emotional exhaustion	Maslach Burnout Inventory	4, 5, 7, 9-12, 15, 17-19, 21-22

Table 3-10--continued

Variables in this study	Instrument	Items
General job satisfaction	JDS	Section 3 (3, 9, 13) Section 5 (2, 8)
Psychological response-internal job motivation	JDS	Section 3 (2, 6, 10, 14) Section 5 (1, 9)

exhaustion, that included ten personal variables, twelve organizational variables, the degree to which the situation is conducive to stress, job stress, job satisfaction, and internal work motivation. Multiple regression analyses were used to answer the study questions. In a post hoc analysis, each independent variable that made a significant contribution to the variance explained in one or more dependent variables was included in a path analysis. Path analysis, as described by Pedhazur (1982), was used to estimate the magnitudes of the direct and indirect effects of these selected variables on perceived levels of stress, general job satisfaction, and burnout-emotional exhaustion, respectively.

CHAPTER IV
STUDY FINDINGS

This study was designed to collect data and to test a path-analytical model of the theoretical conceptualization of burnout for critical care nurses. The model of interest tested was an expansion of the model offered by Perlman and Hartman (1982). Five research questions were used to guide this study in the examination of the full model of burnout including personal and organizational variables and situation conducive to stress, job stress, job satisfaction and internal work motivation. Each of the independent variables that made a significant contribution to the variance explained in the dependent variables was included in the path analysis.

This section is divided into two sections. The first section describes the statistical analysis of the full model. This section includes the mean, standard deviation, and zero-order correlation coefficient between each of the variables included in the study and the results of regression analyses used to address the five research questions posed in Chapter I. The second section includes a presentation of the findings related to estimation of the direct and indirect effects of the exogenous and endogenous variables obtained from applying path analysis to a more parsimonious version of the model.

Full Model and Statistical Analysis

Appendix J contains the means, standard deviations, and zero-order coefficients of correlation between the endogenous variables consisting

of the situation conducive to stress, job stress, job satisfaction, internal job motivation, and burnout-emotional exhaustion and each of the exogenous variables in the study. As shown in Appendix J, many of the variables were found to be significantly associated with the endogenous measures and indicated promise for explaining and predicting burnout in terms of the model shown in Figure 1-2 (pg. 7).

Exogenous Variables

Personal characteristics. Personal variables consisted of ability, time, family demands, job expectations, personal work needs including meaningfulness of work, responsibility for work outcomes, and knowledge of work results, health, commitment to career, and personality. Among the personal characteristics assessed family demands, knowledge of work results, and health were all significantly associated with the situation conducive to stress. With the exception of ability, time, and job expectations, the personal characteristics were all significantly related to job stress, and burnout-emotional exhaustion. Job expectations was inversely related to internal job motivation. Personal characteristics including meaningfulness of work, responsibility for work outcomes, knowledge of work results and commitment to career were all significantly associated with job satisfaction and internal job motivation. In addition, while job expectation was significantly related to job satisfaction, family demands was significantly associated with internal job motivation. The personality variable was measured with three psychological hardiness characteristics of commitment, challenge and control with the total hardiness score. With the exception of job satisfaction, the total psychological hardiness score was significantly associated with the variables situation conducive to stress, job stress, burnout-emotional exhaustion, and internal job motivation.

Organizational work characteristics. Organizational work variables consisted of workload (workload and staff size), expected role performance and role ambiguity, work group norms (skill variety, task identity, task significance, autonomy), dealing with colleagues (dealing with others at work), supervision, opportunity for advancement, pay, support from others at work (social support satisfaction), organizational climate and the economic-market condition (job security) measured with the Job Diagnostic Survey.

As shown in Appendix J, the zero-order coefficient of correlation between all the endogenous variables and expected role performance and role ambiguity, supervision, opportunity for advancement and support from peers at work were significant. Skill variety was significantly related to all endogenous measures except situation conducive to stress and burnout-emotional exhaustion. Task identity was significantly associated with all the endogenous measures. The correlation of task significance was significantly related to job satisfaction and internal job motivation. Autonomy was significantly related to the situation conducive to stress, job stress, and internal work motivation. Dealing with others at work was significantly associated with all the dependent variables. With the exception of the situation conducive to stress, and internal work motivation, pay was significantly associated with the endogenous measures. Job security was significantly related inversely to burnout-emotional exhaustion, and positively related to job satisfaction.

Endogenous Variables

Endogenous variables consisted of situation conducive to stress, job stress, job satisfaction, internal job motivation, and burnout-emotional exhaustion.

As shown in Appendix J, situation conducive to stress was significantly related to all the endogenous measures while job stress was significantly correlated with all the endogenous measures. Burnout-emotional exhaustion was significantly related to job satisfaction. Job satisfaction was significantly related to internal job motivation.

Question 1

Question 1 addressed the significance of the relationship between situational stress and the weighted linear combination of (a) a set of personal variables and (b) a set of organizational variables. In addition, this question also addressed which of the variables in the model contributed significantly to the variance in situational stress.

Multiple regression analysis yielded an R^2 of .72, ($F = 31.948$; $df = 22, 277$; $p = .0001$), indicating that 72% of the variance on the situation conducive to stress variable was explained by the variables in the regression model. Regression results in Table 4-1 show that the personal variables family demands, health difficulties, and psychological hardiness, and the organizational work variables, skill variety and job security, were significant predictors of the situation conducive to stress.

Personal variables that did not relate significantly to situational stress were ability, time, job expectations, meaningfulness of work, responsibility for work outcomes, knowledge of work results, and commitment to career. Organizational variables that did not relate significantly to situational stress were workload, expected role performance and role ambiguity, task identity, task significance, autonomy, supervision, dealing with others, opportunity for advancement, pay, and support from peers at work. (See Table K-1 in Appendix K for results of the multiple regression for all variables.)

Table 4-1

Multiple Regression of Degree Situation Conducive to Stress on the Variables Within Each Block of Characteristics

Block	Variable	Standard coefficient	t-value	p value
Personal characteristics	Family demands	.621	12.180	.0001
	Health	.206	4.118	.0001
	Psychological hardiness	-.086	-2.087	.0378
Organizational work characteristics	Skill variety	.102	2.281	.0233
	Job security	-.070	-1.843	.0664

R^2 = .717 (F = 31.948; df = 22, 277; p = .0001)

Question 2

Question 2 addressed the significant relationship between job stress and the combination of (a) situation conducive to stress and (b) the preceding exogenous variables (ten personal variables and twelve organizational variables). In addition, this question also addressed which of the variables in the model contributed significantly to the variance in job stress.

Multiple regression analyses yielded an R^2 of .74, ($F = 33.222$; $df = 23, 276$; $p = .0001$), indicating that 74% of the variance in job stress was explained by the variables in the regression model. Regression results in Table 4-2 show that the personal variables including time (tenure), family demands, and health difficulties, the organizational variables including workload, pay, supervision and job security and the stress variable, situation conducive to stress were significant predictors of job stress.

Personal variables that did not relate significantly to job stress were ability, job expectations, meaningfulness of work, responsibility for work outcomes, knowledge of work results, commitment to career and psychological hardiness. Organizational variables that did not relate significantly to job stress were expected role performance and role ambiguity, skill variety, task identity, task significance, autonomy, dealing with others, opportunity for advancement, and support from peers at work. (See Table K-2 in Appendix K for results of the multiple regression for all variables.)

Question 3

Question 3 addressed the significant relationship between job satisfaction and the combination of (a) job stress, (b) situational

Table 4-2

Multiple Regression of Job Stress on the Variables Within Each Block of Characteristics and Situation Conducive to Stress

Block	Variable	Standard coefficient	t-value	p value
Personal characteristics	Time	-.1307	-1.824	.0693
	Family demands	.3339	5.425	.0001
	Health	.1422	2.808	.0054
Organizational work characteristics	Workload	.0572	1.733	.0842
	Pay	.101	2.549	.0114
	Supervision	-.0837	-1.781	.0761
	Job security	-.0990	-2.685	.0077
Stress variable	Situation conducive to stress	.3652	6.262	.0001

R^2 = .735 (F = 33.222; df = 23, 276; p = .0001)

stress, and (c) the preceding exogenous variables (10 personal variables and 12 organizational variables). In addition, this question also addressed which of the variables in the model contributed significantly to the variance in job satisfaction.

Multiple regression analysis yielded an R^2 of .64, ($F = 20.413$; $df = 24, 275$; $p = .0001$), indicating that 64% of the variance in job satisfaction was explained by the variables in the regression model. Regression results in Table 4-3 show that the personal variables including job expectations, meaningfulness of work, knowledge of work results, health difficulties and organizational variables including task identity, supervision, dealing with others, opportunity for advancement, pay and job security and the stress variable, job stress, were significant predictors of job satisfaction.

Personal variables that did not relate significantly to job satisfaction were ability, time, family demands, responsibility for work outcomes, commitment to career, and psychological hardiness.

Organizational variables that did not relate significantly to job satisfaction were workload, expected role performance and role ambiguity, skill variety, task significance, autonomy, and support from peers at work. The stress variable degree situation conducive to stress did not relate significantly to job satisfaction. (See Table K-3 in Appendix K for results of the multiple regression for all variables.)

Question 4

Question 4 addressed the significant relationship between internal job motivation and the combination of (a) job stress, (b) situation conducive to stress, and (c) the preceding exogenous variables. In addition, this question also addressed which of the variables in the

Table 4-3

Multiple Regression of Job Satisfaction on the Variables Within Each Block of Characteristics, Job Stress and Situation Conducive to Stress

Block	Variable	Standard coefficient	t-value	p value
Personal characteristics	Job expectations	-.1078	-2.801	.0055
	Meaningfulness of work	.2885	5.398	.0001
	Knowledge of work results	.1061	1.978	.0489
	Health	.1598	2.702	.0073
Organizational work characteristics	Task identity	.0996	2.449	.0150
	Supervision	.2192	4.080	.0001
	Dealing with others	.1717	-3.559	.0004
	Opportunity for advancement	.2125	3.086	.0022
	Pay	.1392	2.976	.0032
	Job security	-.0848	-1.948	.0525
Stress variables	Job stress	-.1404	-2.000	.0465

R^2 = .6405 (F = 20.413; df = 24, 275; p = .0001)

model contributed significantly to the variance in internal job motivation.

Multiple regression analysis yielded an R^2 of .54, ($F = 13.552$; $df = 24, 275$; $p = .0001$), indicating that 54% of the variance of internal job motivation was explained by the variables in the regression model. Regression results in Table 4-4 show that the personal variables including family demands, meaningfulness of work, responsibility for work outcomes, commitment to career and health difficulties and organizational work variables including autonomy, dealing with others, support from peers at work and the stress variable situation conducive to stress were significant predictors of internal work motivation.

Personal variables that did not relate significantly to internal job motivation were ability, time, job expectation, knowledge of work results, and psychological hardiness.

Organizational variables that did not relate significantly to internal job motivation were workload, expected role performance and role ambiguity, skill variety, task identity, task significance, supervision, opportunity for advancement, pay, and job security. The stress variable that did not relate significantly to internal job motivation was job stress. (See Table K-4 in Appendix K for results of the multiple regression for all variables.)

Question 5

Question 5 addressed the significant relationship between burnout-emotional exhaustion and the combination of (a) job satisfaction, (b) internal work motivation, (c) job stress, (d) situation conducive to stress, and (d) the preceding exogenous variables. In addition, this question also addressed which of the variables in the model contributed significantly to the variance in burnout-emotional exhaustion.

Table 4-4

Multiple Regression of Internal Job Motivation on the Variables Within Each Block of Characteristics, Job Stress and Situation Conducive to Stress

Block	Variable	Standard coefficient	t-value	p value
Personal characteristics	Family demands	-.1442	-1.701	.0901
	Meaningfulness of work	.1325	2.196	.0290
	Responsibility for work outcomes	.2168	4.185	.0001
	Commitment to career	.1168	2.560	.0110
	Health	-.1262	-1.890	.0599
Organizational work characteristics	Autonomy	.1713	3.538	.0005
	Dealing with others	.2759	5.065	.0001
	Support from peers at work	.1819	3.041	.0026
Stress variables	Situation conducive to stress	.2509	3.058	.0024

R^2 = .5419 (F = 13.552; df = 24, 275; p = .0001)

Multiple regression analysis yielded an R^2 of .41, ($F = 7.394$; $df = 26, 273$; $p = .0001$), indicating that 41% of the variance in burnout-emotional exhaustion was explained by the variables in the regression model. Regression results in Table 4-5 show the personal variables that were significant predictors of burnout-emotional exhaustion. Specifically, these were health difficulties, commitment to career, and psychological hardiness. The significant organizational work variables included workload, dealing with others, and job security and the job stress outcome/variable job satisfaction.

Personal variables that did not relate significantly to burnout-emotional exhaustion were ability, time, family demands, job expectations, meaningfulness of work, responsibility for work outcomes, and knowledge of work results. Organizational variables that did not relate significantly to burnout-emotional exhaustion were expected role performance and role ambiguity, skill variety, task identity, task significance, autonomy, supervision, opportunity for advancement, pay, and support from peers at work. The job stress outcome variable that did not relate significantly to burnout-emotional exhaustion was internal job motivation. The stress variables that did not relate significantly to burnout-emotional exhaustion were job stress and the degree the situation was conducive to stress. (See Table K-5 in Appendix K for results of the multiple regression for all variables.)

In combination, these study questions have provided a test of the full model of burnout. A major problem in testing the full model was that the large number of variables found to be significantly associated

Table 4-5

Multiple Regression of Burnout-Emotional Exhaustion on the Variables Within Each Block of Characteristics, Job Satisfaction, Internal Job Motivation, Job Stress and Situation Conducive to Stress

Block	Variable	Standard coefficient	t-value	p value
Personal characteristics	Health	.2144	2.780	.0058
	Commitment to career	-.2822	-5.346	.0001
	Psychological hardiness	-.1293	-2.138	.0334
	Workload	.1175	2.349	.0195
Organizational work characteristics	Dealing with others	.1858	2.835	.0049
	Job security	-.1101	-2.183	.0299
Stress outcomes	Job satisfaction	-.3125	-3.995	.0001

R^2 = .4132 (F = 7.394; df = 26, 273; p = .0001)

with burnout made parsimonious and interpretable statements of relationship difficult. To proceed with this exploratory analysis it seemed desirable to reduce the total number of variables by eliminating those variables that were not significantly related to the next endogenous variable on the path in the model. A fairly liberal alpha level of .10 was chosen for variable inclusion in the path analysis to guard against "over-trimming" of the model in this early stage of theory building.

Reduced Model and Path Analysis

Contributions to Situational Stress

Table 4-6 contains the estimates of the direct effects of the exogenous personal variables, and organizational exogenous variables on the situation conducive to stress. An NE in the Direct Effects column of Table 4-6 indicates that the path coefficient was not significantly greater than .00 in the full-model analyses. An NE in the Indirect Effects column indicates that the effect could not be estimated because (a) one of the coefficients along the path had not been significantly greater than .00 in the full model, and thus the path was omitted in the reduced model, or (b) there was no indirect path between the particular independent and dependent variable in the full model show in Figure 1-2. As evidenced in Table 4-6, family demands had the strongest effect (.637) on situation conducive to stress; skill variety had the weakest effect (.062) on situation conducive to stress. This set of variables in the reduced model explained 70% of variance of the situation conducive to stress, as compared to 72% of variance that had been explained in the full model.

Table 4-6

Magnitudes of Direct and Indirect Effects on Situation Conducive to Stress, Level of Perceived Job Stress, General Job Satisfaction and Burnout

Variables	Effect		
	Direct	Indirect	Total
On Degree Situation Conducive to Stress			
Family demands	.637	NE	.637
Health difficulties	.201	NE	.201
Psychological hardiness	-.091	NE	-.091
Skill variety	.062	NE	.062
Job security	-.095	NE	-.095
On Level of Perceived Job Stress			
Degree situation conducive to stress	.370	NE	.370
Time	-.034	NE	-.034
Family demands	.332	.236	.568
Health difficulties	.127	.074	.201
Psychological hardiness	NE	-.034	-.034
Workload	.042	NE	.042
Skill variety	NE	.023	.023
Supervision	-.183	NE	-.183
Pay	-.073	NE	-.073
Job security	-.095	-.035	-.130

Table 4-6--continued

Variables	Effect		
	Direct	Indirect	Total
	On General Job Satisfaction		
Degree situation conducive to stress	NE	-.039	-.039
Level of perceived job stress	-.106	NE	-.106
Family demands	NE	-.060	-.060
Job expectations	-.115	NE	-.115
Meaningfulness for work	.290	NE	.290
Knowledge of work results	.100	NE	.100
Health difficulties	.193	-.021	.172
Psychological hardiness	NE	.004	.004
Skill variety	NE	-.002	-.002
Task identity	.096	NE	.096
Supervision	.237	.019	.256
Dealing with others	-.216	NE	-.216
Opportunity for advancement	.196	NE	.196
Pay	.170	-.008	.162
Job security	-.099	.014	-.085
	On Burnout-Emotional Exhaustion		
General job satisfaction	-.334	NE	-.334
Level of perceived job stress	NE	.035	.035

Table 4-6--continued

Variables	Effect		
	Direct	Indirect	Total
Family demands	NE	.099	.099
Job expectations	NE	.038	.038
Meaningfulness of work	NE	-.097	-.097
Knowledge of work results	NE	-.033	-.033
Commitment to career	-.276	NE	-.276
Health difficulties	.178	-.032	.146
Psychological hardiness	-.114	-.012	-.126
Workload	.103	NE	.103
Skill variety	NE	.009	.009
Task identity	NE	.032	.032
Supervision	NE	-.086	-.086
Dealing with others	.235	.072	.307
Opportunity for advancement	NE	-.065	-.065
Pay	NE	-.054	-.054
Job security	-.088	.017	-.071

Contributions to Perceived Job Stress

Table 4-6 presents the estimates of direct and indirect effects among the exogenous personal and organizational variables and the stress variable situation conducive to stress. Estimates of indirect effects were calculated as the product of the path coefficients of variables connected by arrows that lay on the path between the variables of interest. For example, the indirect effect of family demands on perceived job stress was (.637) X (.370) = .236. This reflects the effect of family demands, acting through the situational stress variable, on the nurses' perceived job stress. Family demands also have a direct effect on perceived job stress, represented by the path coefficient of .332. The personal exogenous variable family demands had the strongest effect (.568) on level of perceived job stress; the organizational exogenous variable skill variety had the weakest effect (.023) on perceived job stress. This set of variables in the reduced model explained 71% of variance in job stress, as compared to 74% of the variance explained with the full model.

Contributions to Job Satisfaction

Table 4-6 also contains the estimates of the direct and indirect effects of the exogenous personal variables and organizational variables and the stress variable job stress on general job satisfaction. The personal exogenous variable meaningfulness of work had the strongest effect on general job satisfaction; the organizational exogenous variable skill variety had the weakest total effect on general job satisfaction. This set of variables in the reduced model explained 62% of variance of general job satisfaction, as compared to 64% of the variance explained in the full model.

Contributions to Burnout-Emotional Exhaustion

Finally, Table 4-6 contains the estimates of the direct and indirect effects among the personal and organizational exogenous variables, the stress variables and job satisfaction on the endogenous variable burnout-emotional exhaustion. As expected, general job satisfaction had the strongest total effect on burnout-emotional exhaustion (-.334); however, skill variety had the weakest total effect on burnout-emotional exhaustion (.009). This set of variables in the reduced model explained 38% of variance of burnout-emotional exhaustion, as compared to 41% of the variance explained in the full model.

Goodness-of-Fit

Assessment of goodness-of-fit of the reduced model was performed. The chi-square goodness-of-fit test for the burnout-emotional exhaustion model among critical care nurses was 39.12 (df = 37, p = .3315), indicating a good fit of the model to the data. The larger the probability associated with the chi-square values, the better the fit of the model to the data (Pedazur, 1982). This finding, however, must be interpreted with caution, recognizing that the model would fit the data less well if a cross-validation sample had been used. Nevertheless, the model tested here seems to hold promise for future confirmatory investigations.

The path diagram graphically displayed in Figure 4-1 represents a proposed pattern of causal relationships among a set of personal exogenous variables, organizational exogenous variables, and endogenous variables (i.e., situation conducive to stress, job stress, job satisfaction, and burnout-emotional exhaustion). The first page of Figure 4-1 (pg. 93) shows paths to the endogenous variable degree

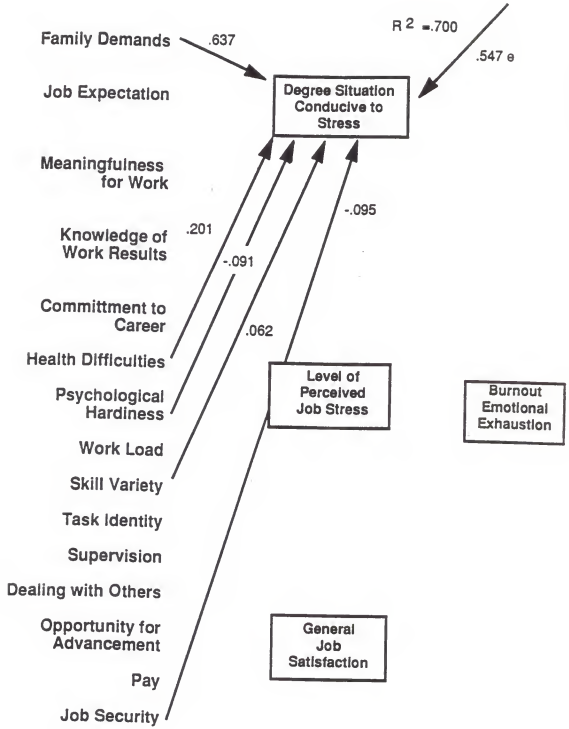

Figure 4-1

Reduced Model of Burnout

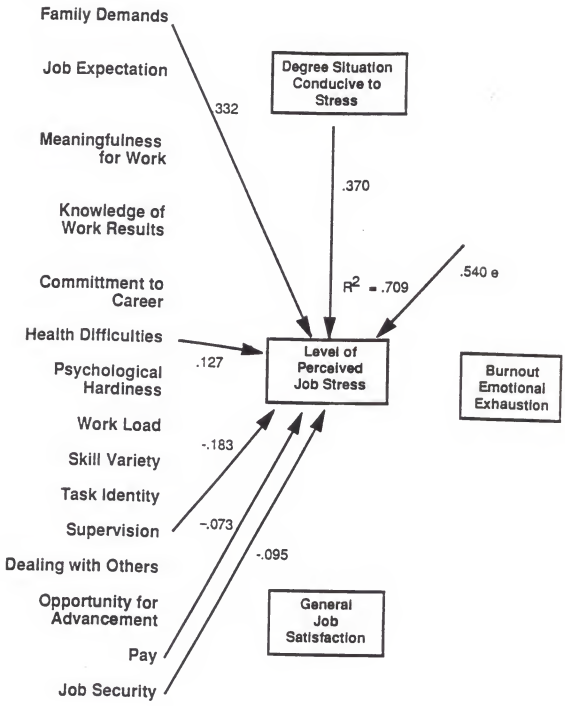

Figure 4-1--continued

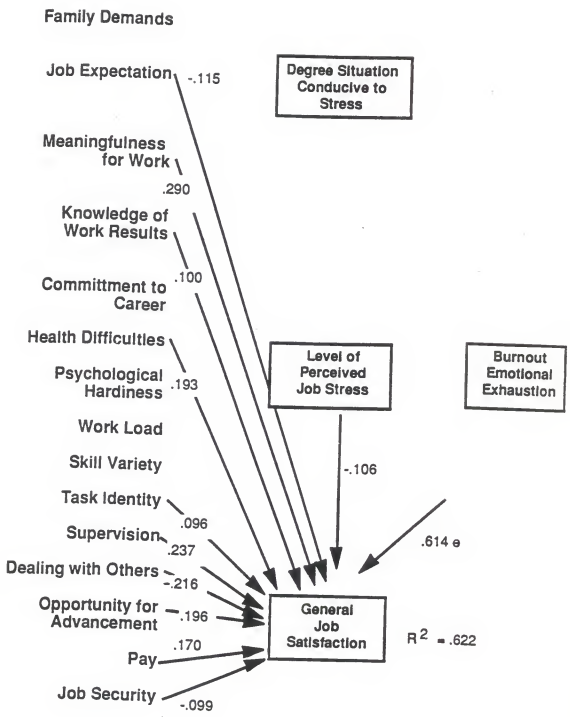

Figure 4-1--continued

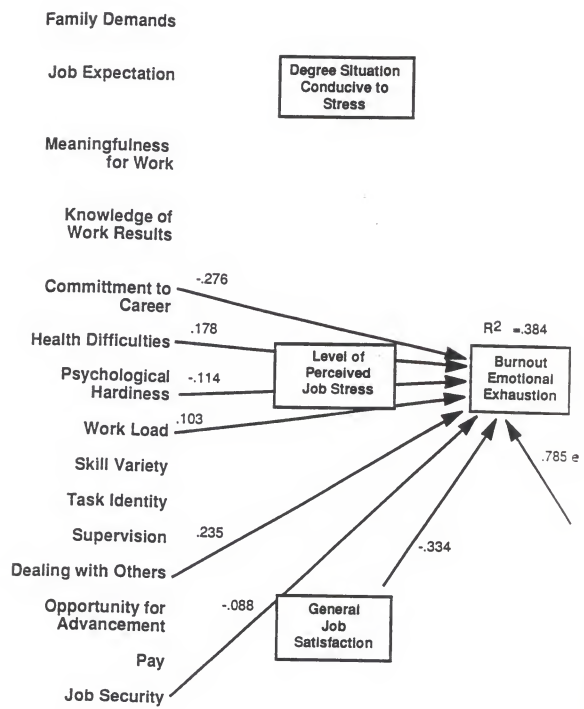

Figure 4-1--continued

situation conducive to stress. The second page of Figure 4-2 (pg. 94) shows paths to the endogenous variable level of perceived job stress. The third page of Figure 4-1 (pg. 95) shows paths to the endogenous variable general job satisfaction. The last page of Figure 4-1 (pg. 96) shows paths to the endogenous variable burnout-emotional exhaustion. No indirect paths with effects less than .05 have been included in this diagram, as suggested by Land (1969). The correlation between exogenous variables is conventionally illustrated by a curve line with arrow heads at both ends indicating that a relationship between exogenous variables were not analyzed in the model. For the purpose of clarity, correlational arrows have not been drawn in Figure 4-1 due to the large number of exogenous variables included in the model. The correlations between the exogenous variables included in the model are shown in Table 4-7.

Table 4-7

Intercorrelations of Exogenous Variables of the Path Analytic Model of Burnout Among Critical Care Nurses

	1	2	3	4	5	6	7
1. Family demands	-----	-.074	-.057	-.32	-.025	.74	-.45
2. Job expectations		-----	-.099	.144	.079	-.80	.069
3. Meaningfulness of work			-----	.495	.22	.026	.174
4. Knowledge of work results				-----	.195	-.263	.362
5. Commitment to career					-----	.062	.108
6. Health						-----	.388
7. Psychological hardiness							-----
8. Workload	.026	.051	.077	.127	.064	.061	.133
9. skill variety	-.107	.087	.451	.367	.227	-.117	.247
10. Task identity	-.142	.020	.0234	.341	.099	-.099	.060
11. Supervision	-.150	.027	.378	.480	.187	-.163	.205
12. Dealing with others	-.340	.010	.167	.336	.057	-.334	.431
13. Opportunity for advancement	-.070	.006	.621	.491	.342	-.0001	.150
14. Pay	.184	.018	.136	.080	.192	.192	-.150
15. Job security	.066	-.003	.163	.129	.069	.090	.141

CHAPTER V
DISCUSSION, INTERPRETATIONS, CONCLUSIONS AND RECOMMENDATIONS

Overview

This study was designed to collect data and to test a path-analytical model of the theoretical conceptualization of burnout for critical care nurses. The model of interest tested was an expansion of the model offered by Perlman and Hartman (1982). The sample consisted of 300 female, critical care staff nurses who had worked for at least three months in a medical, surgical or cardiac intensive care unit at a tertiary, regional or community hospital in Northeastern, Northwestern, Northcentral, and Southern regions of the State of Florida. The analysis included estimation of magnitudes of direct and indirect effects of exogenous and endogenous variables using path analysis. The overall conclusion derived from the analyses was that a modified model of burnout, containing most of the major elements posited by Perlman and Hartman provided a good fit to the data obtained from this sample.

Specifically, the path analysis of burnout indicated that family demands, health difficulties, psychological hardiness, skill variety, and dissatisfaction with job security are causally linked to a situational stress variable for nurses in critical care settings. Together these variables explained 70% of the variance in situational stress. This situational stress variable is in turn linked to perceived job stress, which is also directly affected by family demands and health difficulties, as well as by dissatisfaction with nursing supervision,

dissatisfaction with pay, and dissatisfaction with job security. Together these variables explained 71% of the variance in perceived job stress. Job stress then directly leads to job dissatisfaction. In addition, job dissatisfaction is also directly influenced by job expectations, meaninglessness of work, knowledge of work results, and health difficulties, and as well as by degree of task identity, supervisor dissatisfaction, dealing with others on the job, dissatisfaction with opportunities for advancement, dissatisfaction with pay, and satisfaction with job security. Together these variables explained 62% of the variance in general job satisfaction. Then burnout-emotional exhaustion is directly affected by job dissatisfaction, as well as low commitment to the career, health difficulties, low psychological hardiness, workload, dealing with others on the job, and dissatisfaction with job security. Altogether, however, these variables explained only 38% of the variance in burnout-emotional exhaustion.

The original full model proposed in this study had five endogenous variables. Namely these were the degree in which a situation is conducive to stress, perceived job stress, job satisfaction, internal job motivation, and burnout. One of these -- internal job motivation -- was deleted in the reduced model using the pre-established statistical criterion. From a theoretical perspective, however, this variable was probably the weakest in the model because it was chosen to represent what Perlman and Hartman had originally called "psychological response" and, in retrospect, may not have adequately represented the theorists' intent.

Causes of Burnout

The major results of this study demonstrated that among critical care nurses, general job satisfaction had the strongest total inverse direct effect on burnout-emotional exhaustion. Because the association

of burnout and job satisfaction has been reported in previous studies of helping professionals (Hackman & Oldham, 1978; Jayaratne & Chess, 1983) including nurses (Paredes, 1982; Stone et al., 1984) this finding replicated for critical care nurses, is consistent with previous empirical results. For example, a study conducted by Paredes (1982) has shown that job dissatisfaction accounted for the largest proportion of variance in burnout for nurses. In addition, based on findings by Hackman and Oldham (1974) scores on the Job Diagnostic Survey on job satisfaction were negatively correlated with burnout-emotional exhaustion for helping professions. The implication drawn from the findings of this study is that burnout-emotional exhaustion is caused by a growing dissatisfaction with the job among critical care nurses. In other words, burnout-emotional exhaustion is an outcome of job dissatisfaction.

Still another major finding in the present study is that personal variables (i.e., psychological hardiness, health difficulties, and organizational commitment) and organizational variables (i.e., dealing with others at work, workload, and dissatisfaction with job security) have important direct relationships to burnout-emotional exhaustion.

Kobasa et al. (1979, 1982) defined a hardy individual as one who has control over situations, seeks a challenge and remains fully committed to the situation. Kobasa et al. (1982) found that personality-based hardiness functions prospectively as a resistance resource in decreasing stressful life events. Persons low in hardiness find themselves and the environment meaningless and threatening. They are frightened by change, have little tolerance of ambiguity and see themselves as incapable. Keane et al. (1985) and McCranie et al. (1987) explored the relationship of psychological hardiness, demographics, and burnout among nurses using

the Hardiness Test (Kobasa, 1987). They reported that burnout consistently was negatively correlated with psychological hardiness. Their finding supports the view that hardiness constitutes as a generalized resistance resource for nurses working in intensive care settings. The findings and conclusions from this present study about the direct effects of psychological hardiness on burnout among critical care nurses confirm and expand upon earlier findings and substantiate the theoretical formulation offered by Perlman and Hartman (1982) that the personal characteristic personality has an impact on the process of burnout.

The finding of a direct effect of health difficulties on burnout-emotional exhaustion was also interesting, but not surprising, considering the theoretical framework by Perlman and Hartman (1982) in which they suggested that helping professionals' health may directly affect the response to stress that includes burnout. In addition, Maslach and Jackson (1981) reported that psychosomatic illness and use of tranquilizers were significantly related to burnout-emotional exhaustion. Health difficulties measured in this study are characterized by physical manifestations of stress and include somatic complaints, difficulty sleeping, eating difficulties, and drug and alcohol abuse. What is interesting about these findings is that the reported health symptoms of stress and their direct effect on burnout-emotional exhaustion was significant in a relatively young group of female critical care nurses. A possible explanation for the direct linkage of health difficulties to burnout-emotional exhaustion is that perhaps the coping strategies used by the critical care nurses studied were not sufficiently developed and

consequently were ineffective in preventing burnout. This is a speculation because coping was not examined directly in this study. Kimmel (1982) measured coping with the Ways of Coping Scale (Lazarus & Folkman, 1989) as well as through assessment of role conflict, role ambiguity, household support, and burnout. His sample consisted of nurses from a metropolitan hospital. He reported that coping variables were the best predictors of burnout. Further research to examine how health difficulties and coping mechanisms affect burnout might be fruitful for other helping professions.

The findings from this study also suggest that burnout-emotional exhaustion can result from a low commitment to the career and a high degree of dealing with others (colleagues) at work. Dealing with others (colleagues) was measured in this present study as the degree to which the job requires the nurse to work closely with other people in carrying out the work activities including other organizational members. These findings expand upon earlier research by Gaines and Jermier (1983), Dames (1983), and Leiter and Maslach (1988) and support the theoretical conceptualization offered by Perlman and Hartman (1982). Furthermore, Leiter and Maslach (1988) cited interactions with coworkers as the most important source of burnout in the work setting and, similarly, the present study findings demonstrate a moderate effect (pc = .235), supporting the importance of the interpersonal aspect with others at work as a source of burnout-emotional exhaustion.

There are important implications to these findings. Colleagues on the job include supervisors, other nurses, doctors and administrators who

are significant individuals that the critical care nurse has to deal with in the job setting. The results from this study indicate that the critical care nurse needs emotional energy and resources to relate and deal with them because these colleague relationships can be even more stressful than anticipated and contribute to burnout-emotional exhaustion. Another implication is that if the critical care nurse must frequently deal with others at work, it is important that she relate positively to her nursing and medical peers, seeking opportunities for comfort, advice, praise and support from this essential group because this may assist in warding off emotional strain and exhaustion that is likely to occur. In conclusion, these findings suggest that contact with people at work may be a major source of frustration, distress, or conflict among critical care nurses. In addition, with the presence of a low commitment to continue work, the negative experience of dealing with others, and job dissatisfaction then burnout-emotional exhaustion is likely to be perceived among critical care nurses.

The results of this study also indicate that workload is linked to burnout-emotional exhaustion among critical care nurses and provides support to findings by other researchers. For example, burnout has been correlated with a greater percentage of time in direct care of clients (Lewiston, Conley & Blessing-Moore, 1981; Maslach & Jackson, 1982), more difficult client problems (Meadow, 1981; Pines & Maslach, 1978), and caseload (Maslach & Jackson, 1984a-b). Similarly, nursing researchers have found that the more hours worked and more hours of direct patient contact, the increased risk of burnout (Dames, 1983; Des, 1981). These researchers also stated that the more hours working with patients with grave prognoses, the higher the burnout scores. The direct relationship

of workload to burnout-emotional exhaustion found in this study has support from the literature and makes theoretical as well as practical sense.

The relationship between the economic/market conditions and its direct structural association with burnout-emotional exhaustion has been proposed theoretically (Perlman & Hartman, 1982). The economic/market condition was measured as job security in this study. Results from this study indicated that job security dissatisfaction had an independent path leading directly to burnout-emotional exhaustion. A possible explanation is that critical care nurses may perceive that this is a time of economic uncertainty and hardship for the nursing profession. The increasing shortage of nurses, the increasing number of patients who will need nursing services and the fewer services available to care for the patients presents an unstable situation. However, the findings of this study are confusing because the nurse should not express dissatisfaction with job security in the presence of the current number of vacant nursing positions available nation wide. For example, one possible explanation is that there may be ambiguity about the degree and kind of expertise required of the nurse with the rapid changes in medical technology. In the face of mounting patient needs and reduced services nurses may be faced with the need to adapt their goals and methods from an idealistic approach to a more practical, efficient way to providing care to their patients resulting in a sense of insecurity, resulting in dissatisfaction with the insecure nature of their job as well as professional insecurity. In addition, the present hospital structure of nursing has made vertical

mobility increasingly difficult for the staff nurse. "Burned out" staff nurses, particularly those with 4-5 years of good experience in critical care, may find few, if any, opportunities to rise in their profession. Thus, they may feel "stuck" in their job and resentful about having to remain in their present job. Their sense of frustration may grow, and feelings of burnout increase.

Maslach and Jackson (1981) analyzed separately the three components of burnout among helping professionals including nurses with the Job Diagnostic Survey. Although significant relationships were found between feedback from the job itself and burnout-emotional exhaustion, feedback from supervisors or from coworkers and burnout-emotional exhaustion, skill variety and burnout-emotional exhaustion; and satisfaction with opportunities for advancement and burnout-emotional exhaustion, the findings reported by Maslach and Jackson (1981) were not replicated in this present study among critical care nurses.

Causes of Job Dissatisfaction

The findings from this study indicate that job stress, as well as job expectations, experienced meaninglessness of work, health difficulties, degree of task identity, dissatisfaction with nursing supervision, dealing with others on the job, dissatisfaction with opportunities for advancement, dissatisfaction with pay, and satisfaction with job security have direct effects on job dissatisfaction. A major conclusion from these study findings is that job satisfaction of critical care nurses is a function of personal and organizational variables and job stress. This conclusion is strengthened by the fact that earlier research supports these findings (French, Rodgers, & Cobb, 1974; Nord, 1977; Vachon, 1987).

The personal variable, job expectations, measures the individual worker's expectation for job growth. This measure is viewed as an individual characteristic which is predicted to affect how positively an employee will respond to a job with a high motivating potential or challenge. The data from this study indicated that expectations for growth or challenge on the job was inversely linked to satisfaction with their current job. Stone et al. (1984) studied nurses experiencing burnout and found that they were dissatisfied with their jobs because there were limited opportunities for personal growth on the job. Similarly, the data from this study indicated that high job expectations for growth and challenge among critical care nurses is causally linked to low job satisfaction in their current job and dissatisfaction with opportunities for advancement at work is causally linked to low job satisfaction.

The personal variable, experienced meaningfulness of work, was identified as a personal work need as presented by Perlman and Hartman (1982). Experienced meaningfulness of work is defined as the need to which the nurse experiences the job as one which is generally meaningful, valuable and worthwhile. Unique to this study is the finding that meaninglessness of work had the strongest direct effect on job dissatisfaction in the model studied.

The personal variable, knowledge of work results, was identified as a personal work need as identified by the burnout model offered by Perlman and Hartman (1982). Knowledge of work results measured the nurse's need to know on a continuous basis how effectively she is

performing on the job. Unique to this study is the finding that a low level of knowledge of work results had a minimal direct causal linkage to job dissatisfaction. Further study of this relationship seems indicated.

The finding that health difficulties have a direct causal relationship to job satisfaction is unique to this study. It suggests that health difficulties have a causal link to job satisfaction. This finding, however, is not surprising because the health difficulties variable, which is a measure of physical symptoms of stress in this present study, has consistently provided a direct effect on all the sequences of stress in this model including the situation conducive to stress, job stress, and burnout-emotional exhaustion. Health difficulties is considered as a stressor in the burnout model and contributes to burnout-emotional exhaustion through its direct and indirect effects on job satisfaction. It is important to point out that the variable health difficulties also had direct effects on the other stages of stress and burnout-emotional exhaustion.

According to the research by Hinshaw and Atwood (1984) and Jayaratne and Chess (1983), organizational work-related characteristics, including work task identity, supervision, and pay, were significant factors relating to job satisfaction. Their findings, in conjunction with the significance of interpersonal group interactions and ability to relate to others and its relation to job satisfaction indicated by Slavitt et al. (1987), support the direct linkages of task identity, supervision, pay and the degree of dealing with others, to job satisfaction found in the

present study of critical care nurses. Further study of the structural arrangement of these variables is indicated among other helping professions.

In this present study, the organizational variable, satisfaction with the opportunity for advancement, was measured as the degree to which the nurse is satisfied with the opportunity for personal growth and development in the job. The findings indicate a direct causal link between satisfaction with the opportunity for advancement and job satisfaction. This finding is not surprising because promotional opportunity has been identified as a common predictor of job satisfaction in other studies (Jayaratne & Chess, 1983). The structural relationship suggested by this study has support from the literature and makes theoretical sense.

In this present study, the organizational characteristic, job security, was measured as the amount of perceived job security. Its direct inverse effect on job satisfaction is confusing and difficult to interpret. Low job security causing job satisfaction is an uninterpretable finding. In reviewing the zero order correlational table, although the correlational coefficient between the variables job security and job satisfaction is positive (.17), following path analysis the path coefficient converted to a low negative value (-.099). This may simply have been a function of sampling error.

One feature that clearly stands out is that whereas 62 percent of the total variance is explained by the personal and organizational variables and job stress in the determination of job satisfaction, only

38 percent of the total variance is explained by the personal and organizational variables and situation conducive to stress and job satisfaction for burnout-emotional exhaustion. It appears that the model employed fits the concept of job satisfaction better than it fits the concept of burnout-emotional exhaustion. By implication then, although some of the personal and organizational variables are predictive of job dissatisfaction and burnout-emotional exhaustion, some significant variables related to burnout-emotional exhaustion appear to have been omitted from the model. Determination of the missing variables linked to burnout-emotional exhaustion is necessary for future empirical research.

Comparison of Job Dissatisfaction and Burnout

Earlier research by Jayaratne and Chess (1983) on job satisfaction and burnout in social work suggests that these two concepts are discrete entities. The variables, challenge of the job, promotional opportunity, and financial rewards, were found to be the best predictors of job satisfaction and promotions was the only predictor of burnout-emotional exhaustion according to their study results. In other words, only promotional opportunity was a common predictor of job satisfaction and burnout-emotional exhaustion. In addition, workload, which has been related to burnout in prior literature, did not appear to be an important predictor of burnout and job satisfaction for their sample of social workers. Although earlier research (Jayaratne & Chess, 1983) supported the individuality of the concepts job satisfaction and burnout, the findings from this research are not as straightforward in defining two distinct concepts. This study suggests that health difficulties, dealing

with others on the job, and satisfaction with job security, are common predictors of both job satisfaction and burnout. By contrast, commitment to the career appears to be the prime determinant in burnout-emotional exhaustion, but the challenge of the job, the experienced meaningfulness of work, knowledge of work results, task identity, opportunity for advancement, pay and supervision satisfaction appear to play the major roles in job satisfaction. In addition, the burnout literature has indicated that workload is an important contributor to burnout and the findings from this study point this out as well. In summary, it appears that job satisfaction and burnout are somewhat related in terms of causal attributes; however, variables in this path analytic model explain the variance of job satisfaction to a greater extent than they do for burnout-emotional exhaustion.

Causes of Job Stress

The results from this study reveal that the stress variable situation conducive to stress and personal variables, including stressful family demands and health difficulties, and organizational variables including supervisor dissatisfaction, dissatisfaction with pay and job security are causally related to job stress among critical care nurses. Although these findings do not support the structural relationships of the variable job stress with all of the variables posited by Perlman and Hartman (1982), the findings of this present study have practical significance and warrant further investigation.

The stress variable, situation conducive to stress, had the greatest direct effect on job stress. The situation conducive to stress and job stress variables were measured with The Daily Hassles Scale including the

section measuring inner and future concerns of stress and the section measuring job stress, respectively. Inner and future concerns of stress are characterized as troubling thoughts about the future, concern about the meaning of life, trouble relaxing, concerns with inner conflicts, concerns about getting ahead and concerns about life in general. These stressors arise in any situation where individuals are confronted with demands outside the work place that threaten to overwhelm their capabilities and resources. Job stress is characterized by stressors in the work environment including difficulty getting along with coworkers, dislike of work, problems with employees, unchallenging work, job dissatisfactions, and hassles from the boss or supervisor. These job stressors happen at the work place and threaten to overwhelm the employee's capabilities and resources.

Another stressor that also had a major direct effect on job stress was family demands which was also measured with The Daily Hassles Scale. Family demand stressors are characterized as household responsibilities, home financial responsibilities, and stress within the immediate home environment and the neighborhood.

The personal variable, health difficulties, is another stressor that had a modest direct effect on job stress. Health difficulties are characterized by physical manifestations of stress and include difficulty with sleeping and appetite, and a variety of somatic complaints as was measured with The Daily Hassles Scale. These results are interesting because they suggest that job stress is a function of both organizational stressors and personal variables.

The organizational variables that had a minimal influence on job stress among critical care nurses include dissatisfaction with supervision, pay, and job insecurity. These findings are unique to this study and warrant further investigation.

The present study contributes additional information to the similarities of job stress and job satisfaction. The evidence suggests that job stress and job dissatisfaction relate similarly to the same personal variable health difficulty and organizational variables including dissatisfaction with supervision and pay. This pattern is unique to this study and suggests that job stress and job satisfaction may not be completely distinct concepts but possess some commonality of causal dimensions.

Although the evidence suggests that job stress and burnout relate similarly to the health difficulties and dissatisfaction with job security, family demands, dissatisfaction with supervision, and pay are the prime determinants in job stress. By contrast, low commitment to career, low psychological hardiness, and high degree of dealing with others on the job appear to take the major role in the linkage to burnout-emotional exhaustion. This suggest that although job stress and burnout-emotional exhaustion may possess some commonality there are also distinct causal linkages between personal and organizational variables and these two concepts among critical care nurses.

The theoretical implication of these study findings is that job stress is a complex phenomenon. It is affected by personal stressors, such as family demands, the situation conducive to stress, and health

difficulties, as well as by organizational variables, such as supervision, pay and job security are perceived as stressful aspects of the job among critical care nurses studied. Information about personal stressors and organizational characteristics is necessary to understand the critical care staff nurse's reaction to the job. The fact that the pattern of personal stressors and organizational characteristics were somewhat similar for job stress and job satisfaction suggests that the process that links job stress to job satisfaction may be a fundamental process. However, it is also interesting to identify that the pattern of personal and organizational variables were somewhat dissimilar for job stress and burnout-emotional exhaustion. Further study is indicated to explore the relationship between these two concepts.

Limitations and Recommendations

This research provides an initial test of a comprehensive model for explaning the contributions of personal and organizational variables to burnout-emotional exhaustion among critical care nurses. The results of this study suggest a good fit of personal and organization variables to the burnout model among critical care nurses. Nevertheless, it cannot be concluded that the model reflects the true causal process. It is recommended that this model be considered as formative or exploratory rather than definitive for six reasons:

First, the study focused only on critical care nurses. Further research will be necessary on other organizational and cultural settings and among other helping professional employees before these findings can be generalized to greater numbers of helping professionals. Second, a

test of the model using data based on self-report measures collected at a single point in time makes it difficult to identify the causal relationships between personal variables and organizational variables, situation conducive to stress, job stress, job satisfaction and burnout-emotional exhaustion. Such cross-sectional data make it difficult to determine the effects of stressors and moderators in the model. A more definitive determination of both causal effects and moderating effects would require that further studies employ longitudinal designs. Third, the identification and refined measurement of critical personal and organization variables that might increase the explanatory power of the burnout model should be an ongoing attempt balanced with efforts to achieve parsimony of the explanation of burnout. In addition, as evidenced in the results of the burnout model among critical care nurses additional variables need to be identified and included in the model because the R^2 indicated that the variables in the model account for only 38 percent of the variance in burnout-emotional exhaustion. For example, individual coping techniques, actual work performance and turnover intentions might be other candidates for incorporation into the model of burnout. Furthermore, subgrouping differences among the critical care nurses sampled within the nine hospitals studied may be great and reflect idosyncracies within organizational systems. For example, the findings might reflect a very different kind of worker burnout related to nursing administration burnout, i.e., a burned out system. Fourth, an assumption of path analytical techniques is that there is no measurement error. Although established instruments were

used for this study, self-report measures were employed, and some were fairly short in length. Thus, even though established instruments were used, difficulty with validity and reliability should not be ruled out as a possible explanation for some of the nonsignificant results. Additional research is needed using models in which latent variables underlying the measured variables are posited through the use of linear structural analyses (Joreskog & Sorbom, 1984). Fifth, another assumption of path analytical techniques is that the explanatory personal and organizational variables in the burnout model do not create a problem of multicollinearity. The assumption was violated in several instances. For example, the correlations between family demands and degree situation conducive to stress ($r = .81$, $p = .0001$), and between family demands and job stress ($r = .76$, $p = .0001$) indicated that the variables were redundant in this sample. However, to have eliminated the variables family demands, situation conducive to stress or job stress would have deleted a major purpose of this study, which was to test a model developed from a theoretical formulation. A sixth recommendation centers on the need for cross-validation of the reduced model on an independent sample of critical care nurses. Because of the relatively large number of variables in the model, and because of the exploratory nature of this work, it seemed appropriate to estimate the magnitudes of direct and indirect effects in the reduced model on the sample used for initial variable selection with the full model. This, however, may have resulted in suprious estimates of some effects of the model.

Despite these limitations, the present study represents an important extension of work of previous researchers who have examined only

correlations among large sets of variables or tested a single regression model for predicting job burnout or job satisfaction.

Conclusions

In conclusion, this study has provided an exploratory analysis of the progression of stress within the individual and within the work setting to job dissatisfaction and burnout-emotional exhaustion. As such, it provides an important first step in developing a comprehensive causal model of burnout. First, these study results have clarified relationships among personal variables, including commitment to the career, health difficulties and a psychological hardiness; organizational variables including workload, the degree of dealing with others at work and the degree of satisfaction with job security; and burnout-emotional exhaustion. Second, they have provided a framework for explaining the variance of personal and organization-work variables among critical care nurses in relation to the the degree that a situation is conducive to stress, perceived job stress, job satisfaction, and burnout-emotional exhaustion. Third, these results provide a perspective on the relationship between burnout-emotional exhaustion and job satisfaction in regard to the direct effects of personal and organizational variables. Finally, the study results provide insight needed for a more precise delineation of what is pertinent to the development of burnout-emotional exhaustion. This research indicates that there is a progression of burnout that includes situational stress, job stress, job dissatisfaction, and burnout-emotional exhaustion. The research reported here furthers this process, and provides important direction for future

study of how personal and organization variables, stressors and job dissatisfaction contribute to burnout-emotional exhaustion in the helping professions.

APPENDIX A

INVITATION AND CONSENT FOR PARTICIPATION FROM CRITICAL CARE NURSES

August 7, 1989

Dear Critical Care Nurse:

Your assistance with a research study would be greatly appreciated. Your institution has been chosen as an important and significant provider of Critical Care Nursing in the State of Florida. I am conducting a study on career stress as it affects critical care nurses. Please complete the attached questionnaires which examine some of the components and symptoms of job stress. Do not leave any parts unanswered but rather answer all the questions in the best possible way that you see fit. Be assured, of course, that all responses will remain completely anonymous, and no individual or institution will be identified in the report. I am undertaking the study as part of my doctoral program at the University of Florida.

I will share a summary of the findings with all Nursing Departments that participate. Since the issue has so much professional importance, I sincerely hope that you will be able to assist in the study. You will agree, I am sure, that the issue is an important one and I would be happy to share a summary of the total study with you.

No harm is incurred from participation in the study. Participants may withdraw at any time.

Thank-you.

Joyce Stechmiller, R.N., CCRN, MSN
Project Director,
Adult Critical Care Nursing

_____ I consent to complete the questionnaire battery.

APPENDIX B

PROCEDURES FOR ADMINISTRATION

PROCEDURES FOR ADMINISTRATION

The researcher and/or a graduate assistant, will meet with the critical care staff nurses at an already scheduled staff meeting and the study will be placed on the staff meeting agenda. The researcher and/or the graduate assistant will invite the critical care staff nurses to participate in the study following a brief description of the dissertation. The questionnaires will be handed out to those staff nurses who are interested in participating. The participants will be instructed to complete the questionnaires on their own time away from the work setting. The staff nurses will be requested to place the completed questionnaires in an enclosed sealed envelope and return the envelop to a designated box in the unit nursing lounge within one week.

All subjects will be guaranteed anonymity. A graduate assistant and the nurse researcher will pick up the questionnaires on a daily basis until all the questionnaires are returned.

APPENDIX C

DEMOGRAPHIC SHEET AND WORK SURVEY

DEMOGRAPHIC SHEET AND WORK SURVEY

1. Age (check one):

_____ Under 20	_____ 40-49
_____ 20-29	_____ 50-59
_____ 30-39	_____ 60 or over

2. Marital status (circle one):

1 = single	2 = married
3 = separated	4 = divorced

3. Education (check one):

_____ ADN	_____ BSN
_____ Some graduate work	_____ Diploma

4. How long have you worked as a staff nurse in critical care?

_____ Number of months and/or years

5. How long have you worked as a staff nurse at this institution?

_____ Number of months and/or years

6. How many hours do you work on the average per week in the ICU?

_____ Hours per week

APPENDIX D

DAILY HASSLES SCALE DIRECTIONS AND SAMPLE ITEMS

THE DAILY HASSLES SCALE

NAME: _____ SEX: _____

IDENTIFICATION NUMBER (OPTIONAL): _____ DATE: _____

Directions:

Hassles are irritants that can range from minor annoyances to fairly major pressures, problems, or difficulties. They can occur few or many times in any given time period. Listed below are a number of ways in which a person can feel hassled.

When you respond to the items, you must have a specific time period in mind. Please indicated the time period you will be thinking about:

___ Past month

___ Past week

___ Yesterday

___ Today

___ Other: _____

Read each item and circle 0 if the item was no hassle for you in the time period shown above. If it was a hassle, indicate how severe the hassle was by circling 1, 2, or 3.

How much of a hassle was this for you?	SEVERITY: None or Did Not Occur	Somewhat Severe	Moderately Severe	Extremely Severe
1. Misplacing or or losing things	0	1	2	3
2. Troublesome neighbors	0	1	2	3
3. Social obligations	0	1	2	3
4. Inconsiderate smokers	0	1	2	3
5. Troubling thoughts about your future	0	1	2	3
6. Thoughts about death	0	1	2	3
7. Health of a family member	0	1	2	3
8. Not enough money for clothes	0	1	2	3
9. Not enough money for housing	0	1	2	3
10. Concerns about owing money	0	1	2	3

APPENDIX E

JOB DIAGNOSTIC SURVEY DIRECTIONS AND SAMPLE ITEMS

JOB DIAGNOSTIC SURVEY

This questionaire was developed as part of a Yale University study of jobs and how peole react to them. The questionnaire helps to determine how jobs can be better designed, by obtaining information about how people react to different kinds of jobs.

On the following pages you will find several different kinds of questions about your job. Specific instructions are given at the start of each section. Please read them carefully. It should take no more than 25 minutes to complete the entire questionnaire. Please move through it quickly.

The questions are designed to obtain <u>your</u> perceptions of your job and <u>your</u> reactions to it.

There are no "trick" questions. Your individual answers will be kept completely confidential. Please answer each item as honestly and frankly as possible.

Thank you for your cooperation.

For more information about this questionnaire and its use, please contact:

Prof. J. Richard Hackman
Department of Administrative Sciences
Yale University
New Haven, Connecticut 06520

OR

Prof. Greg R. Oldham
Department of Business Administration
University of Illinois
Urbana, Ilinois 61801

SECTION ONE

This part of the questionnaire asks you to describe your job, as objectively as you can.

Please do not use this part of the questionnaire to show how much like or dislike your job. Questions about that will come later. Instead, try to make your descriptions as accurate and as objective as you possibly can.

A sample question is given below.

A. To what extent does your job require you to work with mechanical equipment?

1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7

Very little; the job requires almost no contact with mechanical equipment of any kind	Moderately	Very much; the job requires almost constant work with mechanical equipment.

You are to circle the number which is the most accurate description of your job.

If, for example, your job requires you to work with mechanical equipment a good deal of the time-- but also requires some paperwork-- you might circle the number six, as was done in the example above.

If you do not understand these instructions, please ask for assistance. If you do understand them, turn the page and begin.

APPENDIX F

WORKLOAD AND STAFF SIZE

WORKLOAD AND STAFF SIZE

Circle the response that best describes your typical work day as a critical care staff nurse:

1. The workload that I must deal with as a critical care staff nurse is:

Satisfactory				Unsatisfactory
1	2	3	4	5

2. The current staff size that is employed in the critical care unit of which I am employed is:

Adequate				Inadequate
1	2	3	4	5

APPENDIX G

HARDINESS TEST DIRECTIONS AND SAMPLE ITEMS

PERSONAL VIEWS SURVEY

Below are some items that you may agree or disagree with. Please indicate how you feel about each one by circling a number from 0 to 3 in the space provided. A zero indicates that you feel the statement is not at all true; circling a three means that you feel the item is completely true.

As you will see, many of the items are worded very strongly. This is to help you decide the extent to which you agree or disagree.

Please read all the items carefully. Be sure to answer all on the basis of the way you feel now. Don't spend too much time on any one item.

0 = Not at all true

1 = A little true

2 = Quite a bit true

3 = Completely true

1. I often wake up eager to take up my life where it left off the day before. 0 1 2 3

2. I like a lot of variety in my work 0 1 2 3

3. Most of the time, my bosses or superiors will listen to what I have to say. 0 1 2 3

APPENDIX H

COMMITMENT TO CAREER

COMMITMENT TO CAREER

1. Do you wish that you could leave the field of nursing?

YES				NO
1	2	3	4	5

APPENDIX I

MASLACH BURNOUT INVENTORY DIRECTIONS AND SAMPLE ITEMS

HUMAN SERVICES SURVEY

How Often:

0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

How Often (0-6)	Statements
1. _____	I feel emotionally drained from my work.
2. _____	I feel used up at the end of the workday.
3. _____	I feel fatigued when I get up in the morning and have to face another day on the job.
4. _____	I can easily understand how my recipients feel about things.

APPENDIX J

MEANS, STANDARD DEVIATIONS AND CORRELATIONAL ANALYSIS

Table J-1

Descriptive Statistics for Exogenous Variables

Variable	N	Mean	Standard deviation
Ability	300	117.82	68.858
Time (tenure)	300	139.327	103.192
Family demands	300	.751	.408
Job expectations	300	4.104	2.446
Meaningfulness of work	300	5.752	.844
Responsibility for work outcomes	300	5.751	.653
Knowledge of work results	300	4.999	.946
Commitment to career	300	3.537	1.357
Health difficulties	300	.501	.396
Hardiness total	300	69.310	11.01
Workload	300	4.973	.804
Expected role performance	300	4.668	.898
Skill variety	300	5.916	.818
Task identity	300	4.212	1.112
Task significance	300	6.152	.777
Autonomy	300	5.909	.905
Supervision	300	4.950	1.27
Dealing with others	300	6.116	.787
Opportunity for advancement	300	5.459	.893
Pay satisfaction	300	3.903	1.608
Social support	300	5.639	.766
Job security	300	5.207	1.224

Table J-2

Descriptive Statistics for Endogenous Variables

Variable	N	Mean	Standard deviation
Situation conducive to stress	300	.717	.387
Job stress	300	.659	.427
Emotional exhaustion	300	2.589	1.070
Depersonalization	300	1.543	1.150
Personal accomplishment	300	3.442	.832
Job satisfaction	300	4.949	1.110
Internal work motivation	300	5.874	.640

Table J-3

Correlation Analysis for Exogenous and Endogenous Variables

	1	2	3	4	5	6	7
1. Ability	1.00000 0.0	0.89440 0.0001	0.04366 0.4512	-0.02178 0.7072	0.10422 0.0715	0.07600 0.1893	0.03750 0.5176
2. Time	0.89440 0.0	1.00000 0.0	0.01008 0.8620	0.01052 0.8560	0.09824 0.0894	0.07119 0.2189	0.07315 0.2064
3. Family demands	0.04366 0.4512	0.01008 0.8620	1.00000 0.0	-0.07389 0.2019	-0.05672 0.3276	-0.04572 0.4301	-0.32342 0.0001
4. Job expectations	-0.02178 0.7072	0.01052 0.8560	-0.07389 0.2019	1.00000 0.0	-0.09955 0.0852	-0.09524 0.0997	0.14481 0.0120
5. Meaningfulness of work	0.10422 0.0715	0.09824 0.0894	-0.05672 0.3276	-0.99559 0.0852	1.00000 0.0	0.46875 0.0001	0.49537 0.0001
6. Responsibility for work outcomes	0.07600 0.1893	0.07119 0.2189	-0.04572 0.4301	-0.09524 0.0997	0.46875 0.0001	1.00000 0.0	0.33132 0.0001
7. Knowledge of work results	0.03750 0.5176	0.07315 0.2064	-0.32342 0.0001	0.14481 0.0120	0.49537 0.0001	0.33132 0.0001	1.00000 0.0
8. Commitment to career	-0.15944 0.0056	-0.16250 0.0048	-0.02536 0.6617	0.07881 0.1734	0.22048 0.0001	0.17508 0.0965	0.19506 0.0007
9. Health	-0.018913 0.7545	-0.04861 0.4015	0.74082 0.0001	-0.08136 0.1598	0.02629 0.6501	-0.02759 0.6341	-0.26371 0.0001
10. Commitment	-0.04229 0.4656	-0.03446 0.5522	-0.40811 0.0001	0.04871 0.4006	0.23368 0.0001	0.13445 0.0198	0.37583 0.0001
11. Control	0.00491 0.9325	0.00628 0.9138	-0.45914 0.0001	0.06427 0.2671	0.18148 0.0016	0.07654 0.1861	0.38735 0.0001

	1	2	3	4	5	6	7
12. Challenge	-0.02431 0.6750	-0.01391 0.8104	-0.31506 0.0001	0.07315 0.2064	0.02813 0.6274	0.04129 0.4762	0.18416 0.0014
13. Hardiness total	-0.02379 0.6815	-0.01657 0.7755	-0.44539 0.0001	0.06874 0.2352	0.17449 0.0024	0.09830 0.0892	0.36287 0.0001
14. Work load	-0.09834 0.0891	-0.13526 0.0191	0.02611 0.6524	0.05193 0.3701	0.07693 0.1839	0.00234 0.9678	0.12709 0.0277
15. Expected performance and role ambiguity	0.07320 0.2061	0.07991 0.1674	-0.09146 0.1139	-0.02005 0.7294	0.40521 0.0001	0.31916 0.0001	0.51095 0.0001
16. Skill variety	0.02823 0.6262	0.03579 0.5368	-0.10797 0.0618	0.08719 0.1319	0.45108 0.0001	0.28964 0.0001	0.36740 0.0001
17. Task identity	0.07467 0.1971	0.07281 0.2085	-0.14232 0.0136	0.01999 0.7302	0.23370 0.0001	0.17042 0.0031	0.34135 0.0001
18. Task significance	0.01217 0.8337	0.03710 0.5221	-0.00814 0.8884	0.01280 0.8253	0.29239 0.0001	0.26893 0.0001	0.17996 0.0018
19. Autonomy	0.00145 0.9800	0.04832 0.4044	-0.14242 0.0135	-0.00310 0.9574	0.23224 0.0001	0.09614 0.0965	0.23209 0.0001
20. Supervision	0.08011 0.1664	0.09683 0.0941	-0.15037 0.0091	0.02687 0.6430	0.37790 0.0001	0.23261 0.0001	0.47950 0.0001
21. Dealing with others	0.01566 0.7871	0.04398 0.4479	-0.33998 0.0001	0.00985 0.8688	0.16711 0.0037	0.17281 0.0027	0.33611 0.0001
22. Opportunity for advancement	-0.03958 0.4946	-0.01288 0.8242	-0.07025 0.2251	0.00604 0.9170	0.62118 0.0001	0.42258 0.0001	0.49151 0.0001

		1	2	3	4	5	6	7
23.	Pay	-0.05374 0.3537	-0.05205 0.3690	0.18420 0.0014	0.01799 0.7563	0.13692 0.0117	0.15160 0.0085	0.07963 0.1689
24.	Support from peers from work	0.05616 0.3323	0.04306 0.4574	-0.1283 0.0754	-0.00706 0.9030	0.49499 0.0001	0.39189 0.0001	0.39284 0.0001
25.	Job security	-0.14232 0.0136	-0.12126 0.0358	0.06616 0.2533	-0.00288 0.9604	0.16275 0.0047	0.11925 0.0390	0.12898 0.0255
1.	Degree situation conducive to stress	0.01130 0.8455	-0.03829 0.5088	0.81395 0.0001	-0.04134 0.4756	-0.10069 0.0817	-0.05379 0.3532	-0.35257 0.0001
2.	Level of perceived job stress	0.00089 0.9878	-0.06446 0.2657	0.76131 0.0001	-0.09135 0.1143	-0.20731 0.0003	-0.14046 0.0149	-0.41107 0.0001
3.	Emotional exhaustion	0.06884 0.2345	0.02616 0.6517	0.15583 0.0068	-0.04884 0.3992	-0.27614 0.0001	-0.13571 0.0187	-0.26021 0.0001
4.	Depersonalization	-0.02813 0.6275	-0.05497 0.3427	0.13154 0.0227	-0.06600 0.2545	-0.23036 0.0001	-0.20045 0.0005	-0.24799 0.0001
5.	Personal accomplishment	-0.00901 0.8765	0.00635 0.9128	-0.05722 0.3233	0.10051 0.0822	0.29973 0.0001	0.22412 0.0001	0.13941 0.0157
6.	Job satisfaction	0.06026 0.2982	0.06385 0.2703	0.09754 0.0917	-0.12487 0.0306	0.58331 0.0001	0.35615 0.0001	0.39106 0.0001
7.	Internal job motivation	0.06270 0.2790	0.05951 0.3042	-0.21928 0.0001	-0.08091 0.1622	0.44186 0.0001	0.44901 0.0001	0.36868 0.0001
		8	9	10	11	12	13	14
1.	Ability	-0.15944 0.0056	-0.01813 0.7545	-0.04229 0.4656	0.00491 0.9325	-0.02431 0.6750	-0.02379 0.6815	-0.09834 0.0891

	8	9	10	11	12	13	14
2. Time	-0.16250 0.0048	-0.04861 0.4015	-0.03446 0.5522	0.00628 0.9138	-0.01391 0.8104	-0.01657 0.7750	-0.13526 0.0191
3. Family demands	-0.02536 0.6617	0.74082 0.0001	-0.40811 0.0001	-0.45914 0.0001	-0.31056 0.0001	-0.44539 0.0001	0.02611 0.6524
4. Job expectations	0.07881 0.1734	-0.08136 0.1598	0.04871 0.4006	0.06427 0.2671	0.07315 0.2064	0.06874 0.2352	0.05193 0.3701
5. Meaningfulness of work	0.22048 0.0001	0.02629 0.6501	0.23368 0.0001	0.18148 0.0016	0.02813 0.6274	0.17449 0.0024	0.07693 0.1839
6. Responsibility for work outcomes	0.17508 0.0023	-0.02759 0.6341	0.13445 0.0198	0.07645 0.1861	0.04129 0.4762	0.09830 0.0892	0.00234 0.9678
7. Knowledge of work results	0.19506 0.0007	-0.26371 0.0001	0.37583 0.0001	0.38735 0.0001	0.18416 0.0014	0.36287 0.0001	0.12709 0.0277
8. Commitment to career	1.00000 0.0	-0.06209 0.2838	0.20192 0.0004	0.11436 0.0478	-0.05578 0.3356	0.10812 0.0614	0.06417 0.2678
9. Health	-0.06209 0.2838	1.00000 0.0	-0.33921 0.0001	-0.38642 0.0001	-0.30706 0.0001	-0.388831 0.0001	0.06135 0.2895
10. Commitment	0.20192 0.0004	-0.33921 0.0001	1.00000 0.0	0.83720 0.0001	0.64671 0.0001	0.94504 0.0001	0.12879 0.0257
11. Control	0.11436 0.0478	-0.38642 0.0001	0.83720 0.0001	1.00000 0.0	0.54134 0.0001	0.90361 0.0001	0.12660 0.0283
12. Challenge	-0.05578 0.3356	-0.30706 0.0001	0.64671 0.0001	0.54134 0.0001	1.00000 0.0	0.80507 0.0001	0.09576 0.0978

	8	9	10	11	12	13	14
13. Hardiness total	0.10812 0.0614	-0.38831 0.0001	0.94504 0.0001	0.90361 0.0001	0.80507 0.0001	1.00000 0.0	0.13293 0.0213
14. Work load	0.06417 0.2678	0.06135 0.2895	0.12879 0.0257	0.12660 0.0283	0.09576 0.0978	0.13293 0.0213	1.00000 0.0
15. Expected performance and role ambiguity	0.22779 0.0001	-0.06812 0.2395	0.17439 0.0024	0.17708 0.0021	-0.03522 0.5434	0.12715 0.0277	0.01900 0.7431
16. Skill variety	0.22688 0.0001	-0.11724 0.0424	0.27856 0.0001	0.24555 0.0001	0.11787 0.0413	0.24712 0.0001	0.09924 0.0862
17. Task identity	0.09863 0.0881	-0.09859 0.0883	0.08800 0.1283	0.11603 0.0446	-0.05988 0.3013	0.06018 0.2988	0.02458 0.6715
18. Task significance	0.08461 0.1437	0.02514 0.6645	0.19829 0.0006	0.20471 0.0004	0.06101 0.2922	0.17953 0.0018	0.07399 0.2013
19. Autonomy	0.13026 0.0240	-0.07517 0.1942	0.32919 0.0001	0.31840 0.0001	0.20498 0.0004	0.32455 0.0001	0.07571 0.1909
20. Supervision	0.18700 0.0011	-0.16249 0.0047	0.23633 0.0001	0.26897 0.0001	0.01639 0.7775	0.20459 0.0004	-0.09043 0.1181
21. Dealing with others	0.05654 0.3290	-0.33432 0.0001	0.41848 0.0001	0.44756 0.0001	0.26982 0.0001	0.43176 0.0001	-0.01484 0.7980
22. Opportunity for advancement	0.34157 0.0001	-0.00010 0.9986	0.24965 0.0001	0.14915 0.0097	-0.02901 0.6167	0.14993 0.0093	0.02965 0.6090
23. Pay	0.19244 0.0008	0.19242 0.0008	-0.04495 0.4380	-0.20199 0.0004	-0.16482 0.0042	-0.14952 0.0095	-0.05337 0.3569

		8	9	10	11	12	13	14
24.	Support from peers from work	0.16894 0.0033	-0.08028 0.1655	0.20026 0.0005	0.23077 0.0001	0.04208 0.4678	0.18385 0.0014	0.01727 0.7657
25.	Job security	0.06890 0.2341	0.08977 0.1200	0.17431 0.0024	0.08383 0.1475	0.11111 0.0546	0.14084 0.0146	0.02996 0.6053
1.	Degree situation conducive to stress	-0.05534 0.3395	0.69301 0.0001	-0.42812 0.0001	-0.44038 0.0001	-0.32482 0.0001	-0.45140 0.0001	0.03375 0.5604
2.	Level of perceived job stress	-0.12110 0.0360	0.66394 0.0001	-0.39456 0.0001	-0.42526 0.0001	-0.25455 0.0001	-0.40838 0.0001	0.08432 0.1451
3.	Emotional exhaustion	-0.38037 0.0001	0.19172 0.0008	-0.17995 0.0018	-0.08835 0.1268	-0.12991 0.0244	-0.15115 0.0087	0.08921 0.1231
4.	Depersonalization	-0.40679 0.0001	0.20693 0.0003	-0.24562 0.0001	-0.14992 0.0093	-0.10385 0.0725	-0.19284 0.0008	0.11796 0.0412
5.	Personal accomplishment	0.37453 0.0001	-0.06283 0.2780	0.27449 0.0001	0.19684 0.0006	0.12087 0.0364	0.22809 0.0001	0.04027 0.4872
6.	Job satisfaction	0.026396 0.0001	0.16092 0.0052	0.04748 0.4125	-0.02519 0.6639	-0.17020 0.0031	-0.04652 0.4220	-0.03165 0.5851
7.	Internal job motivation	0.24874 0.0001	-0.21551 0.0002	0.33436 0.0001	0.32512 0.0001	0.11933 0.0389	0.30067 0.0001	-0.03119 0.5905
		15	16	17	18	19	20	21
1.	Ability	0.07320 0.2061	0.02823 0.6262	0.07467 0.1971	0.01217 0.8337	0.00145 0.9800	0.08011 0.1664	0.01566 0.7871
2.	Time	0.07991 0.1674	0.03579 0.5368	0.07281 0.2085	0.03710 0.5221	0.04832 0.4044	0.09683 0.0941	0.04398 0.4479

	15	16	17	18	19	20	21
3. Family demands	-0.09146 0.1139	-0.10797 0.0618	-0.14232 0.0136	-0.00814 0.8884	-0.14242 0.0135	-0.15037 0.0091	-0.33998 0.0001
4. Job expectations	-0.02005 0.7294	0.08719 0.1319	0.01999 0.7302	0.01280 0.8253	-0.00310 0.9574	0.02687 0.6430	0.00958 0.8688
5. Meaningfulness of work	0.40521 0.0001	0.45108 0.0001	0.23370 0.0001	0.29239 0.0001	0.23224 0.0001	0.37790 0.0001	0.16711 0.0037
6. Responsibility for work outcomes	0.31916 0.0001	0.28964 0.0001	0.17042 0.0031	0.26893 0.0001	0.09614 0.0965	0.23261 0.0001	0.17281 0.0027
7. Knowledge of work results	0.51095 0.0001	0.36740 0.0001	0.34135 0.0001	0.17996 0.0018	0.23209 0.0001	0.47950 0.0001	0.33611 0.0001
8. Commitment to career	0.22779 0.0001	0.22688 0.0001	0.09863 0.0881	0.08461 0.1437	0.13026 0.0240	0.18700 0.0011	0.05654 0.3290
9. Health	-0.06812 0.2395	-0.11724 0.0424	-0.09859 0.0883	0.02514 0.6645	-0.07517 0.1942	-0.16294 0.0047	-0.33432 0.0001
10. Commitment	0.17439 0.0024	0.27856 0.0001	0.08800 0.1283	0.19829 0.0006	0.32919 0.0001	0.23633 0.0001	0.41848 0.0001
11. Control	0.17708 0.0021	0.24555 0.0001	0.11603 0.0446	0.20471 0.0004	0.31840 0.0001	0.26897 0.0001	0.44756 0.0001
12. Challenge	-0.03522 0.5434	0.11787 0.0413	-0.05988 0.3013	0.06101 0.2922	0.20498 0.0004	0.01639 0.7775	0.26982 0.0001
13. Hardiness total	0.12715 0.0277	0.24712 0.0001	0.06018 0.2988	0.17953 0.0018	0.32455 0.0001	0.20459 0.0004	0.43176 0.0001

	15	16	17	18	19	20	21
14. Work load	0.01900 0.7431	0.09924 0.0862	0.02458 0.6715	0.07399 0.2013	0.07571 0.1909	-0.09042 0.1181	-0.01484 0.7980
15. Expected performance and role ambiguity	1.00000 0.0	0.33955 0.0001	0.35800 0.0001	0.21134 0.0002	0.27122 0.0001	0.57005 0.0001	0.19196 0.0008
16. Skill variety	0.33955 0.0001	1.00000 0.0	0.20740 0.0003	0.40271 0.0001	0.34872 0.0001	0.25713 0.0001	0.44186 0.0001
17. Task identity	0.35800 0.0001	0.20740 0.0003	1.00000 0.0	0.13026 0.0241	0.09208 0.1115	0.29877 0.0001	0.07589 0.1899
18. Task significance	0.21134 0.0002	0.40271 0.0001	0.13026 0.0241	1.00000 0.0	0.17343 0.0026	0.19203 0.0008	0.28596 0.0001
19. Autonomy	0.27122 0.0001	0.34872 0.0001	0.09208 0.1115	0.17343 0.0026	1.00000 0.0	0.17262 0.0027	0.31542 0.0001
20. Supervision	0.57005 0.0001	0.25713 0.0001	0.29877 0.0001	0.19203 0.0008	0.17262 0.0027	1.00000 0.0	0.15034 0.0091
21. Dealing with others	0.19196 0.0008	0.44186 0.0001	0.07589 0.1899	0.28596 0.0001	0.31542 0.0001	0.15034 0.0091	1.000000 0.0
22. Opportunity for advancement	0.53004 0.0001	0.47944 0.0001	0.33051 0.0001	0.28231 0.0001	0.31435 0.0001	0.57896 0.0001	0.16522 0.0041
23. Pay	0.25969 0.0001	-0.05032 0.3851	0.09381 0.1049	-0.00832 0.8859	0.04237 0.4647	0.22139 0.0001	-0.27601 0.0001

	15	16	17	18	19	20	21
24. Support from peers from work	0.42608 0.0001	0.37565 0.0001	0.25229 0.0001	0.24434 0.0001	0.21759 0.0001	0.55193 0.0001	0.22115 0.0001
25. Job security	0.21757 0.0001	0.01248 0.8295	-0.00899 0.8768	0.11940 0.0388	0.24168 0.0001	0.26150 0.0001	-0.00462 0.9365
1. Degree situation conducive to stress	-0.12381 0.0321	-0.05410 0.3504	-0.14440 0.0123	-0.02476 0.6693	-0.14673 0.0109	-0.22595 0.0001	-0.27039 0.0001
2. Level of perceived job stress	-0.22682 0.0001	-0.17543 0.0023	-0.17573 0.0023	-0.04053 0.4843	-0.21225 0.0002	-0.34672 0.0001	-0.31755 0.0001
3. Emotional exhaustion	-0.17370 0.0026	-0.05484 0.3438	-0.17137 0.0029	0.03275 0.5721	-0.04334 0.04545	-0.26352 0.0001	0.12158 0.0353
4. Depersonalization	-0.23838 0.0001	-0.16599 0.0039	-0.26164 0.0001	-0.02330 0.6877	-0.06851 0.2368	-0.23005 0.0001	-0.04192 0.4695
5. Personal accomplishment	0.19468 0.0007	0.21697 0.0002	-0.04282 0.4599	0.15769 0.0062	0.11612 0.0445	0.16426 0.0043	0.01032 0.8588
6. Job satisfaction	0.44621 0.0001	0.19744 0.0006	0.33171 0.0001	0.12266 0.0337	0.07119 0.2189	0.51866 0.0001	-0.13660 0.0179
7. Internal job motivation	0.32593 0.0001	0.45934 0.0001	0.15772 0.0062	0.28710 0.0001	0.36801 0.0001	0.27062 0.0001	0.50730 0.0001

	22	23	24	25	1	2	3
1. Ability	-0.03958 0.4946	-0.05374 0.3537	0.05616 0.3323	-0.14232 0.0136	0.01130 0.8455	0.00089 0.9878	0.06884 0.2345
2. Time	-0.01288 0.8242	-0.05205 0.3690	0.04306 0.4574	-0.12126 0.0358	-0.03829 0.5088	-0.06446 0.2657	0.02616 0.6517

	22	23	24	25	1	2	3
3. Family demands	-0.07025 0.2251	0.18420 0.0014	-0.10283 0.0754	0.06616 0.2533	0.81395 0.0001	0.76131 0.0001	0.15583 0.0068
4. Job expectations	0.00604 0.9170	0.01799 0.7563	-0.00706 0.9030	-0.00288 0.9604	-0.04134 0.4756	-0.09135 0.1143	-0.04884 0.3992
5. Meaningfulness of work	0.62118 0.0001	0.13692 0.0177	0.49499 0.0001	0.16275 0.0047	-0.10069 0.0817	-0.20731 0.0003	-0.27614 0.0001
6. Responsibility for work outcomes	0.42258 0.0001	0.15160 0.0085	0.39189 0.0001	0.11925 0.0390	-0.05379 0.3532	-0.14046 0.0149	-0.13571 0.0187
7. Knowledge of work results	0.49151 0.0001	0.07963 0.1689	0.39284 0.0001	0.12898 0.0255	-0.35257 0.0001	-0.41107 0.0001	-0.26021 0.0001
8. Commitment to career	0.34157 0.0001	0.19244 0.0008	0.16894 0.0033	0.06890 0.2341	-0.05534 0.3395	-0.12110 0.0360	-0.38037 0.0001
9. Health	-0.00010 0.9986	0.19242 0.0008	-0.08028 0.1655	0.08997 0.1200	0.69301 0.0001	0.66394 0.0001	0.19172 0.0008
10. Commitment	0.24965 0.0001	-0.04495 0.4380	0.20026 0.0005	0.17431 0.0024	-0.42812 0.0001	-0.39456 0.0001	-0.17995 0.0018
11. Control	0.14915 0.0097	-0.20199 0.0004	0.23077 0.0001	0.08383 0.1475	-0.44038 0.0001	-0.42526 0.0001	-0.08835 0.1268
12. Challenge	-0.02901 0.6167	-0.16482 0.0042	0.04208 0.4678	0.11111 0.0546	-0.32482 0.0001	-0.25455 0.0001	-0.12991 0.0244
13. Hardiness total	0.14993 0.0093	-0.14952 0.0095	0.18385 0.0014	0.14084 0.0146	-0.45140 0.0001	-0.40838 0.0001	-0.15115 0.0087

	22	23	24	25	1	2	3
14. Work load	0.02965 0.6090	-0.05337 0.3569	0.01727 0.7657	0.02996 0.6053	0.03375 0.5604	0.08432 0.1451	0.08921 0.1231
15. Expected performance and role ambiguity	0.53004 0.0001	0.25969 0.0001	0.42608 0.0001	0.21757 0.0001	-0.12381 0.0321	-0.22682 0.0001	-0.17307 0.0026
16. Skill variety	0.47944 0.0001	-0.05032 0.3851	0.37565 0.0001	0.01248 0.8295	-0.05410 0.3504	-0.17543 0.0023	-0.05484 0.3438
17. Task identity	0.33051 0.0001	0.09381 0.1049	0.25229 0.0001	-0.00899 0.8768	-0.14440 0.0123	-0.17573 0.0023	-0.17137 0.0029
18. Task significance	0.28231 0.0001	-0.00832 0.8859	0.24434 0.0001	0.11940 0.0388	-0.02476 0.6693	-0.04053 0.4843	0.03275 0.5721
19. Autonomy	0.31435 0.0001	0.04237 0.4647	0.21759 0.0001	0.24168 0.0001	-0.14673 0.0001	-0.21225 0.0002	-0.04334 0.4543
20. Supervision	0.57896 0.0001	0.22139 0.0001	0.55193 0.0001	0.26150 0.0001	-0.22595 0.0001	-0.34672 0.0001	-0.26352 0.0001
21. Dealing with others	0.16522 0.0041	-0.27601 0.0001	0.22115 0.0001	-0.00462 0.9365	-0.27039 0.0001	-0.31755 0.0001	0.12158 0.0353
22. Opportunity for advancement	1.00000 0.0	0.38627 0.0001	0.66214 0.0001	0.31387 0.0001	-0.11658 0.0436	-0.23151 0.0001	-0.32576 0.0001
23. Pay	0.38627 0.0001	1.00000 0.0	0.12324 0.0329	0.35290 0.0001	0.10762 0.0627	0.12311 0.0330	-0.21749 0.0001

		22	23	24	25	1	2	3
24.	Support from peers from work	0.66214 0.0001	0.12324 0.0329	1.00000 0.0	0.22085 0.0001	-0.14462 0.0122	-0.26936 0.0001	-0.22639 0.0001
25.	Job security	0.31387 0.0001	0.35290 0.0001	0.22085 0.0001	1.00000 0.0	-0.04682 0.4191	-0.10396 0.0722	-0.16897 0.0033
1.	Degree situation conducive to stress	-0.11658 0.0436	0.10762 0.0627	-0.14462 0.0122	-0.04682 0.4191	1.00000 0.0	0.78169 0.0001	0.26221 0.0001
2.	Level of perceived job stress	-0.23151 0.0001	0.12311 0.0330	-0.26936 0.0001	-0.10396 0.0722	0.78169 0.0001	1.00000 0.0	0.28319 0.0001
3.	Emotional exhaustion	-0.32576 0.0001	-0.21749 0.0001	-0.22639 0.0001	-0.16897 0.0033	0.26221 0.0001	0.28319 0.0001	1.00000 0.0
4.	Depersonalization	-0.332330 0.0001	-0.12746 0.0273	-0.26452 0.0001	-0.02339 0.6866	0.21501 0.0002	0.25697 0.0001	0.60774 0.0001
5.	Personal accomplishment	0.24659 0.0001	0.10522 0.0688	0.23659 0.0001	0.14211 0.0137	-0.10521 0.0688	-0.11292 0.0507	-0.29516 0.0001
6.	Job satisfaction	0.61746 0.0001	0.40161 0.0001	0.42478 0.0001	0.17348 0.0026	-0.01077 0.8526	-0.11343 0.0497	-0.42493 0.0001
7.	Internal job motivation	0.42007 0.0001	-0.03840 0.5076	0.44875 0.0001	0.03122 0.5902	-0.13188 0.0223	-0.26063 0.0001	-0.04243 0.4641

		4	5	6	7
1.	Ability	-0.02813 0.6275	-0.00901 0.8765	0.06026 0.2982	0.06270 0.2790
2.	Time	-0.05497 0.3427	0.00635 0.9128	0.06385 0.2703	0.05951 0.3042

	4	5	6	7
3. Family demands	0.13154 0.0227	-0.05722 0.3233	0.09754 0.0917	-0.21928 0.0001
4. Job expectations	-0.06600 0.2545	0.10051 0.0822	-0.12487 0.0306	-0.08091 0.1622
5. Meaningfulness of work	-0.23036 0.0001	0.29973 0.0001	0.58331 0.0001	0.44186 0.0001
6. Responsibility for work outcomes	-0.20045 0.0005	0.22412 0.0001	0.35615 0.0001	0.44901 0.0001
7. Knowledge of work results	-0.24799 0.0001	0.13941 0.0157	0.39106 0.0001	0.36868 0.0001
8. Commitment to career	-0.40679 0.0001	0.37453 0.0001	0.26396 0.0001	0.24874 0.0001
9. Health	0.20693 0.0003	-0.06283 0.2780	0.16092 0.0052	-0.21551 0.0002
10. Commitment	-0.24562 0.0001	0.27449 0.0001	0.04748 0.4125	0.33436 0.0001
11. Control	-0.14992 0.0093	0.19684 0.0006	-0.02519 0.6639	0.32512 0.0001
12. Challenge	-0.10385 0.0725	0.12087 0.0364	-0.17020 0.0031	0.11933 0.0389
13. Hardiness total	-0.19284 0.0008	0.22809 0.0001	-0.04652 0.4220	0.30067 0.0001

	4	5	6	7
14. Work load	0.11796 0.0412	0.04027 0.4872	-0.03165 0.5851	-0.03119 0.5905
15. Expected performance and role ambiguity	-0.23838 0.0001	0.19468 0.0007	0.44621 0.0001	0.32593 0.0001
16. Skill variety	-0.16599 0.0039	0.21697 0.0002	0.19744 0.0006	0.45934 0.0001
17. Task identity	-0.26164 0.0001	-0.04282 0.4599	0.33171 0.0001	0.15772 0.0062
18. Task significance	-0.02330 0.6877	0.15769 0.0062	0.12266 0.0337	0.28710 0.0001
19. Autonomy	-0.06851 0.2368	0.11612 0.0445	0.07119 0.2189	0.36801 0.0001
20. Supervision	-0.23005 0.0001	0.16426 0.0043	0.51866 0.0001	0.27062 0.0001
21. Dealing with others	-0.04192 0.4695	0.01032 0.8588	-0.13660 0.0179	0.50730 0.0001
22. Opportunity for advancement	-0.32330 0.0001	0.24659 0.0001	0.61746 0.0001	0.42007 0.0001
23. Pay	-0.12746 0.0273	0.10522 0.0688	0.40161 0.0001	-0.03840 0.5076

		4	5	6	7
24.	Support from peers from work	-0.26452 0.0001	0.23659 0.0001	0.42478 0.0001	0.44875 0.0001
25.	Job security	-0.02339 0.6866	0.14211 0.0137	0.17348 0.0026	0.03122 0.5902
1.	Degree situation conducive to stress	0.21501 0.0002	-0.10521 0.0688	-0.01077 0.8526	-0.13188 0.0223
2.	Level of perceived job stress	0.25697 0.0001	-0.11292 0.0507	-0.11343 0.0497	-0.26063 0.0001
3.	Emotional exhaustion	0.60744 0.0001	-0.29516 0.0001	-0.42493 0.0001	-0.04243 0.4641
4.	Depersonalization	1.00000 0.0	-0.35664 0.0001	-0.29000 0.0001	-0.18169 0.0016
5.	Personal accomplishment	-0.35664 0.0001	1.00000 0.0	0.16063 0.0053	0.17793 0.0020
6.	Job satisfaction	-0.29000 0.0001	0.16063 0.0053	1.00000 0.0	0.14002 0.0152
7.	Internal job motivation	-0.18169 0.0016	0.17793 0.0020	0.14002 0.0152	1.00000 0.0

APPENDIX K

MULTIPLE REGRESSION OF THE FULL MODEL

Table K-1

Multiple Regression of Degree Situation Conducive to Stress on the Variables Within Each Block of Characteristics

Block	Variable	Standard coefficient	t-value	p value
Personal characteristics	Ability	.074	1.010	.3132
	Time	-.107	-1.454	.1471
	Family demands	.621	12.180	.0001*
	Job expectations	.033	0.974	.3308
	Meaningfulness of work	-.038	-0.803	.4225
	Responsibility for work outcomes	.030	.774	.4393
	Knowledge of work results	-.074	-1.573	.1168
	Health	.206	4.118	.0001*
	Commitment to career	-.019	-0.532	.5950
	Psychological hardiness	-.086	-2.087	.0378*
Organizational work characteristics	Workload	.013	.389	.6978
	Expected role performance and role ambiguity	.024	.531	.5959
	Skill variety	.102	2.281	.0233*
	Task identity	-.011	-0.296	.7675
	Task significance	-.025	-.694	.4884
	Autonomy	-.008	-.207	.8358
	Supervision	-.036	-.762	.4496

Table K-1--continued

Block	Variable	Standard coefficient	t-value	p value
	Dealing with others	.049	1.148	.2520
	Opportunity for advancement	-.008	-0.135	.8925
	Pay	.0006	.015	.9880
	Support from peers at work	-.017	-.357	.7216
	Job security	-.070	-1.843	.0664*

R^2 = .717 (f = 31.948, p = .0001)

Table K-2

Multiple Regression of Job Stress on the Variables Within Each Block of Characteristics and Situation Conducive to Stress

Block	Variable	Standard coefficient	t-value	p value
Personal characteristics	Ability	.1136	1.589	.1133
	Time	-.1307	-1.824	.0693*
	Family demands	.3274	5.339	.0001*
	Job expectations	-.0461	-1.402	.1620
	Meaningfulness of work	-.0700	-1.534	.1262
	Responsibility for work outcomes	-.0280	-.747	.4555
	Knowledge of work results	-.0175	-.381	.7033
	Health	.1296	2.587	.0102*
	Commitment to career	-.0484	-1.402	.1621
	Psychological hardiness	.0396	.984	.3262
Organizational work characteristics	Workload	.0572	1.733	.0842*
	Expected role performance and role ambiguity	-.0140	-.322	.7476
	Skill variety	-.0162	-.371	.7111
	Task identity	.0028	.081	.9352
	Task significance	.0526	1.475	.1413
	Autonomy	-.0408	-1.111	.2676
	Supervision	-.1072	-2.360	.0190*

Table K-2--continued

Block	Variable	Standard coefficient	t-value	p value
	Dealing with others	.0105	.254	.8000
	Opportunity for advancement	.0109	.185	.8532
	Pay	.101	2.549	.0114*
	Support from peers at work	-.0545	-1.203	.2299
	Job security	-.0990	-2.685	.0077*
Stress variable	Situation conducive to stress	.3652	6.262	.0001*

R^2 = .735 (F = 33.222, p = .0001)

Table K-3

Multiple Regression of Job Satisfaction on the Variables Within Each Block of Characteristics, Job Stress and Situation Conducive to Stress

Block	Variable	Standard coefficient	t-value	p value
Personal characteristics	Ability	-.0059	-.070	.9442
	Time	.0151	.180	.8575
	Family demands	.1332	1.773	.0773*
	Job expectations	-.1078	-2.801	.0055*
	Meaningfulness of work	.2885	5.398	.0001*
	Responsibility for work outcomes	.0420	.960	.3381
	Knowledge of work results	.1061	1.978	.0489*
	Health	.1598	2.702	.0073*
	Commitment to career	.0639	1.582	.1147
	Psychological hardiness	-.0394	-.837	.4034
Organizational work characteristics	Workload	-.0308	-.794	.4281
	Expected role performance and role ambiguity	.0179	.353	.7242
	Skill variety	-.0334	-.656	.5124
	Task identity	.0996	2.449	.0150*
	Task significance	-.0207	-.648	.5173
	Autonomy	-.0543	-1.266	.2065
	Supervision	.2192	4.080	.0001*

Table K-3--continued

Block	Variable	Standard coefficient	t-value	p value
	Dealing with others	-.1717	-3.559	.0004*
	Opportunity for advancement	.2125	3.086	.0022*
	Pay	.1392	2.976	.0032*
	Support from peers at work	-.0237	-.447	.6550
	Job security	-.0848	-1.948	.0525*
Stress variables	Job stress	-.1404	-2.000	.0465*
	Degree situation conducive to stress	-.0569	-.782	.4346

R^2 = .6405 (F = 20.413, p = .0001)

Table K-4

Multiple Regression of Internal Job Motivation on the Variables Within Each Block of Characteristics, Job Stress and Situation Conducive to Stress

Block	Variable	Standard coefficient	t-value	p value
Personal characteristics	Ability	.0654	.691	.4900
	Time	-.0484	-.510	.6104
	Family demands	-.1442	-1.701	.0901*
	Job expectations	-.0706	-1.624	.1055
	Meaningfulness of work	.1325	2.196	.0290**
	Responsibility for work outcomes	.2068	4.188	.0001*
	Knowledge of work results	.0200	.330	.7414
	Health	-.1262	-1.890	.0599*
	Commitment to career	.1168	2.560	.0110*
	Psychological hardiness	.0420	.790	.4299
Organizational work characteristics	Workload	-.0696	-1.590	.1130
	Expected role performance and role ambiguity	.0134	.234	.8148
	Skill variety	.0254	.441	.6593
	Task identity	-.0186	-.406	.6853
	Task significance	.0326	.691	.4900
	Autonomy	.1713	3.538	.0005*
	Supervision	-.0387	-.639	.5236

Table K-4--continued

Block	Variable	Standard coefficient	t-value	p value
	Dealing with others	.2759	5.065	.0001*
	Opportunity for advancement	.0243	.313	.7545
	Pay	-.101	-.194	.8465
	Support from peers at work	.1819	3.041	.0026*
	Job security	-.0758	-1.542	.1243
Stress variables	Job stress	-.0068	-.086	.9314
	Degree situation conducive to stress	.2509	3.058	.0024*

R^2 = .5419 (F = 13.552, p = .0001)

Table K-5

Multiple Regression of Burnout-Emotional Exhaustion on the Variables Within Each Block of Characteristics, Job Satisfaction, Internal Job Motivation, Job Stress and Situation Conducive to Them

Block	Variable	Standard coefficient	t-value	p value
Personal characteristics	Ability	.1590	1.478	.1404
	Time	-.1344	-1.246	.2139
	Family demands	-.0943	-.970	.3330
	Job expectations	-.0375	-.743	.4583
	Meaningfulness of work	-.0872	-1.191	.2347
	Responsibility for work outcomes	.0230	.396	.6921
	Knowledge of work results	-.0497	-.717	.4742
	Health	.2144	2.780	.0058*
	Commitment to career	-.2822	-5.346	.0001*
	Psychological hardiness	-.1293	-2.138	.0334*
Organizational work characteristics	Workload	.1175	2.349	.0195*
	Expected role performance and role ambiguity	.0673	1.039	.2998
	Skill variety	.0275	.421	.6743
	Task identity	-.0351	-.667	.5055
	Task significance	.0585	1.090	.2765
	Autonomy	.0186	.331	.7410
	Supervision	.0799	1.126	.2612

Table K-5--continued

Block	Variable	Standard coefficient	t-value	p value
	Dealing with others	.1858	2.835	.0049*
	Opportunity for advancement	-.0257	-.286	.7754
	Pay	-.0046	-.075	.9400
	Support from peers at work	-.0756	-1.094	.2749
	Job security	-.1101	-2.183	.0299
Job stress outcomes	Job satisfaction	-.3125	3.995	.0001*
	Internal job motivation	.0841	1.214	.2258
Stress variables	Job stress	.0328	.362	.7180
	Degree situation conducive to stress	.1209	1.275	.2033

R^2 = .4132 (F = 7.394, p = .0001)

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BIOGRAPHICAL SKETCH

Joyce Kolbek Stechmiller was born in Passaic, New Jersey, on September 5, 1947. She graduated from Clara Maass School of Nursing in May, 1968, with a diploma in nursing. After graduation, she began work as a staff nurse in the Recovery Room and Surgical Intensive Care Unit of Johns Hopkins Hospital, Baltimore, Maryland, and entered the baccalaureate nursing program at the University of Maryland in Baltimore. In May, 1972, she graduated with a baccalaureate degree in nursing. From 1972 to 1975, she served as nurse researcher at the Johns Hopkins Hospital. During that time she also completed a master's degree in medical-surgical clinical specialist nursing from the University of Maryland.

In 1975, she began employment at Boston City Hospital and Boston State College as a cardiovascular clinical nurse specialist and instructor of baccalaureate nursing students. In 1977, she moved to Gainesville, Florida, and joined the nursing faculty at the University of Florida. Over the past thirteen years she has held several positions as a nursing instructor. She entered in the doctoral program in the College of Education at the University of Florida in January, 1985.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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Professor of Foundations of Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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